The Library of Congress'

EARLY STATE RECORDS PROJECT

converted from the original microfilm held by the
Vincent C. Immel Law Library, Saint Louis University

through the generous support of a grant from the

Council on Library and Information Resources

Mississippi State Board of Health reports

reformatted from the original and including:

Report of the Mississippi State Board of Health, <years 1878--'79>

Biennial report of the Mississippi State Board of Health, 1880-1881-1890-'91

Report of the old Mississippi State Board of Health, January 1st, 1892, up to November 1st 1892, the date it ceased to exist

Report of the new Mississippi State Board of Health, November 15, 1892, the date of its organization, to September 30, 1893

Report of the Mississippi State Board of Health, September 30, 1893 to September 30, 1894, and from September 30, 1894 to January 1, 1896

LLMC 01-488t

BIENNIAL REPORT

STATE BOARD OF HEALTH.

REPORT

OF THE

MISSISSIPPI

STATE BOARD OF HEALTH,

FOR THE YEARS 1878--'79.

PRINTED BY AUTHORITY.

JACKSON, MISS.:
POWER & BARKSDALE, STATE PRINTERS.

1879.

OFFICERS.

Presideut.

C. A. RICE, M. D.....VICKSBURG.

Secretary.

WIRT JOHNSTON, M. D.....JACKSON.

For the State at Large.

F. W. DANCY, M. D.....Holly Springs.
D. L. PHARES, M. D.....Woodville.
WIRT JOHNSTON, M. D.....Jackson.

First District — J. M. Taylor, M. D.....Corinth.
E. P. Sale, M. D.....Aberdeen.
Second District—T. D. Isom, M. D.....Oxford.
John Wright, M. D.....Sardis.
Third District— S. V. D. Hill, M. D.....Macon.
B. F. Kittrell, M. D.....Black Hawk.
Fourth District—P. J. McCormick, M. D.....Yazoo City.
Geo. E. Redwood, M. D.....Meridian.
Fifth District — Robert Kells, M. D.....Jackson.
J. W. Bennett, M. D.....Brookhaven.
Sixth District—R. G. Wharton. M. D.....Port Gibson.
C. A. Rice, M. D.....Vicksburg.

EXECUTIVE COMMITTEE.

C. A. Rice, M. D., Robert Kells, M. D., Wirt Johnston, M. D.

COMMITTEE ON LEGISLATION.

J. M. Taylor, M. D. D. L. Phares, M. D. John Wright, M. D, E. P. Sale, M. D. Robert Kells, M. D.

COMMITTEE ON PUBLICATION, STATIONERY AND PRINTING.

Robert Kells, M. D., C. A. Rice, M. D., Wirt Johnston, M. D.

LOCAL BOARDS OF HEALTH.

COUNTY BOARDS.

Alcorn	Dr. J. D. Beck, Pres	Corinth.
Attala	Dr. J. M. Lewis, Pres	Kosciusko.
Amite	Dr. T. J. Jackson, Pres	Liberty.
Adams	Dr. T. S. Sharpe, Pres	Natchez.
Benton	Dr. Frank Ferrell, Pres	Ashland.
Bolivar	Dr. J. W. Dulaney, Pres	Rosedale.
Coahoma	Dr. J. A. Cooper, Pres	Friar's Point.
Chickasaw	Dr. J. S. Cain, Pres	Okolona.
Copiah	Dr. G. W. Purnell, Pres	Hazlehurst.
Clarke	Dr. W. E. Jones, Pres	Quitman.
Choctaw	Dr. J. W. George, Pres	Chester.
Covington	Dr. Alex. Fairly, Pres	Williamsburg.
Carroll	Dr. G. W. Vassar, Pres	Carrollton.
Claiborne	Dr. R. G. Wharton, Pres	Port Gibson.
Clay	Dr. J. E. McEachin, Pres	West Point.
DeSoto	Dr. J. P. H. Westbrook, Pres.	Hernando.
Grenada	Dr. H. J. Ray, Pres	Grenada.
Hinds	Dr. R. L. Bogle, Pres	Raymond.
Harrison	Dr. Geo. N. Smith, Pres	Pass Christian
Hancock	Dr. Edward Latham,	Bay St. Louis.
Holmes	Dr. W. W. Durden, Pres	Lexington.
Issaquena	Dr. B. D. McGown, Pres	Mayersville.
Jefferson	Dr. N. L. Guice, Pres	Fayette.
Jasper	Dr. W. G. Bailey, Pres	Claiborne.
Jackson	Dr. E. F. Griffin, Pres	Scranton.
Kemper	Dr. L. M. McLendor, Sec	Sucarnochee.
Leflore	Dr. M. G. Davis, Pres	Greenwood.
Lafayette	Dr. J. T. Chandler, Pres	Oxford.
Lee	Dr. R. C. Cunningham, Pres	Verona.
Lowndes	Dr. B. A. Vaughan, Pres	Columbus.
Leake	Dr. B. Noah Ward, Pres	
Lauderdale	Dr. Geo. E. Redwood, Pres	Meridian.
Madison	Dr. B. T. Semmes, Pres	Canton.
Marshall	Dr. W. F. Hyer, Pres	Hudsonville.
Monroe	Dr. E. P. Sale, Pres	Aberdeen.
Marion	Dr. T. B. Ford, Pres	Columbia.
Montgomery	Dr. B. F. Ward, Pres	Winona.
Noxubee	Dr. J. S. Featherston, Pres	Macon.
Newton	Dr. C. P. Parton, Pres	Decatur.

Oktibbeha	Dr. W. N. Ames, Pres	Starkville.
Panola	Dr. M. N. Phillips, Pres	Batesville.
Prentiss	Dr. D. T. Price, Pres	Booneville.
Pontotoc	Dr. M. R. Fontaine, Pres	Pontotoc.
Rankin	Dr. Wm. Aills, Pres. pro tem	Steen's Creek.
Sharkey	Dr. J. W. Ellis, Sec	Deer Creek.
Simpson	Dr. Wm. Giles, Pres	Westville.
Sumner	Dr. A. H. Bays, Pres	Walthall.
Tippah	Dr. W. D. Carter, Pres	Ripley.
Tate	Dr. J. R. Slaton, Pres	Senatobia.
Winston	Dr. A. S. Kirk, Pres	Louisville.
Washington	Dr. J. S. Walker, Pres	Greenville.
Wilkinson	Dr. L. W. Magruder, Pres	Woodville.
Yalobusha	Dr. H. A. Gant, Sec	Water Valley.
Yazoo	Dr. J. P. Moore, Pres	Yazoo City.

MUNICIPAL BOARDS.

Austin	Dr. W. J. Nelson	Secretary.
Abbeville	Dr. C. A. Pegues	President.
Baldwyn	Dr. E. A. Cox	President.
Black Hawk	Dr. B. F. Kittrell	President.
Byhalia	Dr. J. H. Hays	President.
Batesville	Dr. S. P. Lester	President.
Byram	Dr. S. F. Sorsby	President.
Beauregard	Frank McIntosh	Secretary.
Benton	Dr. H. Yandell	President.
Booneville	Dr. D. T. Price	President.
Cumberland	Dr. O. B. Cooke	President.
Cato	Dr. C. R. Norman	President.
Crystal Springs	Dr. F. L. Fulgham	President.
Coffeeville	Dr. A. A. Powell	President.
Carthage	Dr. W. R. Blailock	President.
Concordia	Dr. Jno. B. Pease	President.
Clinton	J. B. Gambrell	President.
Durant	Dr. R. B. Carson	Health Officer
Duck Hill	Dr. T. R. Trotter	President.
Enterprise	Dr. A. L. Kline	President.
Holly Springs	Dr. F. W. Dancy	President.
Hillsboro	Dr. J. W. Lack	President.
Jackson	Dr. P. T. Baley	President.
Liberty	Dr. D. H. Bryant	President.
Lodi	Dr. M. H. Allen	President.
Lake	Dr. J. L. Gresham	President.
Louisville	Dr. J. A. Fox	President,
Morton	Dr. D. P. Rawles	President.
McComb City	Dr. D. U. Ford	President.
Mt. Pleasant	D. C. McCampbell	President.
Magnolia	A. LeBlanc	President.

Macon	Dr. H. A. Minor	President.
Osyka	J. W. Cutrer	President.
Okolona	Dr. J. S. Cain	Health Officer.
Pleasant Hill	Dr. H. W. Gray	President.
Pickens	Dr. T. W. Wright	President.
Pontotoc	Dr. W. R. Minniece	President.
Port Gibson	Dr. R. G. Wharton	President.
Rienzi	Dr. J. W Bynum	President.
Rodney	Dr. T. W Coleman	Health Officer.
Sardis	W. D. Heflin	Secretary.
Summit	Dr. J. R. Sample	President.
Satartia	Dr. L. W. Tuttle	President.
Starkville	Dr. W. N. Ames	President.
Taylor's Depot	Dr. B. F. Archer	President.
Vaiden	Dr. T. W. Fullilove	President.
Verona	Dr. R. C. Cunningham	President.
Vicksburg	Dr. O. S. Iglehart	President.
Waynesboro	Dr. J Pitts	President.
Wesson	Dr. R. W. Rea	President.

PRESIDENT'S REPORT.

VICKSBURG, MISS., November 27th, 1879.

To His Excellency, Gov. J. M. Stone, Jackson, Miss:

In presenting this our second report of the Mississippi State Board of Health, it being the third year of the existence of the Board, we do so with the consciousness of having performed a faithful stewardship. As guardians of the public health, as faithful sentinels upon the watch-tower, we have sounded the alarm, but for the want of proper legislation, we have been unable to institute measures that might, and we think would have averted the destruction of our people last year by yellow fever. Under the present laws we stand as an advisory body only, without power to establish quarantine or law to enforce it, with no appropriation to put into operation, and none to sustain it.

Our vital statistic laws are defective, as there is no penalty to compel reports; without vital statistics the whole principle and machinery of hygiene must fall.

Circulars, letters, telegrams, instructions and advice in every shape and form was forwarded to every local Board in the State by Dr. Johnston, the Secretary and Executive officer of our Board. He never tired in his arduous duties for the weal of our people. Even after the fever had attacked the city of Jackson his mind never forgot the suffering and needs elswhere, but wherever and whenever assistance, counsel or admonition was needed, he at once gave it attention. Too much praise cannot be accorded to him.

The individual members willingly came when a meeting was called, abandoning their practice, and giving freely their time and counselling as to the best for the public good.

When the disease reached their doors all stood firm, knowing, too, that they possessed no more immunity from the disease than those they were trying to succor; and in attestation of their devotion to the cause of suffering humanity, we lost four out of fifteen of the members of the State Board of Health from yellow fever.

We are not disposed to relax our energies in the field of sanitation, but a consciousness of inefficiency in our present condition under existing State laws, makes us in duty bound to ask for further legislation to promote the efficiency and usefulness of the Board.

With the full confidence that the terrible lesson which we were taught in the epidemic of 1878 will induce, through your recommendation, wholesome legislation upon this subject.

I am with respect, C. A. RICE, M. D.,
President State Board of Health.

STATE BOARD OF HEALTH.

MINUTES.

JACKSON, MISS., April 3, 1878.

THE MISSISSIPPI STATE BOARD OF HEALTH met in the Capitol at 8 o'clock, P. M. The President, Dr. Kells, in the chair.

Present: Drs. J. M. Taylor, S. V. D. Hill, C. A. Rice, P. F. Whitehead and R. G. Wharton.

The Secretary reported that he had learned of the outbreak of small-pox in the southern portion of the State, and that five hundred circulars on the means of prevention had been distributed in the counties of Pike, Lincoln, Marion, Amite and Lawrence.

The Secretary also reported that he had mailed to the President of the Board of Supervisors in each county in the State, two copies of the recent law relating to Boards of Health, one of which was for their own guidance, the other to be handed to the County Board of Health when elected.

The Secretary submitted a set of blank forms to be used in the Registration of Vital Statistics, with estimates of the cost.

On motion, the Board adjourned to meet to-morrow at 8 o'clock, P. M.

APRIL 4th, 1878.

The Board met at 8 o'clock, P. M. The President in the chair.

Present: Drs. Phares, Taylor, Hill, Rice, Kells, Whitehead and Wharton.

The Secretary read letters from several of the absent members, expressing their regrets at being unable to attend.

The blank forms for the Registration of Vital Statistics, submitted by the Secretary at a previous meeting, were adopted.

It being ascertained that the amount of money appropriated by the Legislature for blank books, blank forms, stationery, etc., was not sufficient to carry on the Registration of Vital Statistics for two years, on motion, it was resolved that the

time at which the registration shall be commenced is left to the President and Secretary to determine.

On motion of Dr. Hill, Dr. Phares was selected to write a report on the Abuse of Indigenous Remedies.

On motion of Dr. Hill, Dr. Taylor was selected to write a paper on the Rights, Duties and Privileges of the Community in Relation to those of the Individual in regard to Health.

Dr. Taylor was appointed to prepare a set of Rules for the government of the Board, to report at the next meeting.

On motion, the Board adjourned to meet at 9 o'clock, A. M., to-morrow.

APRIL 5th, 1878.

The Board met at 9 o'clock, A. M. The President in the chair.

Present: Drs. Phares, Taylor, Hill, Kells, Whitehead and Wharton.

Dr. Taylor presented the following rules for the government of the Board, which were adopted:

RULE 1. The Board shall hold an annual meeting on the ——day of——of each year, at which time all officers not otherwise provided for shall be elected. Special meetings may be held at any time by direction of the President, or may be called by the Secretary at the request of three members. The time and place of meeting to be determined by the officer calling the meeting. If, at any meeting, a quorum be not present any smaller number may adjourn from time to time.

2. Each member of the Board shall attend all its meetings, when properly notified, and unless excused shall faithfully perform any special duty imposed on him by the Board, and shall, in general, do all in his power to aid in furthering the objects and business of the Board.

3. The President shall be elected annually. He shall preside at all meetings of the Board and enforce the usual parliamentary rules in conducting business; and in addition to the duties defined by the laws of the State, he shall, in general, perform all duties incident to the office, and shall continue to hold office and perform these duties until his successor is chosen. In his absence a temporary chairman shall be chosen.

4. The Secretary, in addition to the duties prescribed in the laws, shall keep an accurate account of all receipts whether of money or property, and of all expenditures of the Board. He shall keep his books and records subject to inspection by the Board or any member thereof, and shall deliver all property of the Board to his successor in office. His term of office shall continue at the will of the Board.

5. All bills, including those for the traveling and other neces-

sary expenses of the members while employed on the business of the Board, shall be laid before the Finance Committee for approval before they are presented for payment.

6. In addition to such special committees as may be directed by the Board, there shall be appointed annually by the President, a Committee on Legislation, and a committee on Stationery, Printing and Publication, to consist of three members each. The President shall also appoint annually each member of the Board, except the Secretary, a committee to report on some subject connected with sanitary science or preventive medicine.

7. No papers shall be published in the Annual Reports of this Board, except such as are ordered or approved for purposes of such publication by the Committee on Publication, and any paper so ordered or approved shall be published over the signature of the writer.

8. The order of business at the regular meetings of the Board shall be:

1. Reading the minutes of any previous meeting not already approved.
2. Reports of Standing Committees.
3. Reports of Special Committees.
4. Miscellaneous business.
5. Adjournment.

9. These rules may be amended only at regular meetings of the Board, and by a vote of two-thirds of the members present.

On motion the Board adjourned.

JACKSON, MISS., Dec. 10th, 1878.

At a called meeting of the Board, there were present: The President, Dr. Kells. Drs. Phares, Taylor, Wright, Hill and Rice.

There being a quorum present the Board proceeded to business.

The minutes of the preceding meeting were read and approved,

Dr. Wirt Johnston presented his appointment as a member of the Board, from the State at large, in place of Dr. W. M. Compton, deceased, and was recognized as such.

Dr. C. A. Rice, who was elected President *pro tem* during the recent epidemic of yellow fever, made the following report, which on motion of Dr. Wright was received and ordered filed:

Gentlemen—Members of the State Board of Health:

As the *pro tempore* President of the State Board of Health,

I have called you together believing that it is of vital importance to the people of our State that we meet and take such action as we may deem necessary for their welfare and future protection from epidemic infection.

It is but right and proper that I should render an account of my official acts during my temporary presidency.

The epidemic of yellow fever was taking its hundreds a day from our people, among them many of our noblest and best physicians—those whom we loved and honored most, among which were some of the members of our State Board; and it did seem impossible, with the long time before cold weather could arrest its course, and the fact that it was making its appearance almost daily at some near point, it did seem that if something was not done to arrest its course that our entire State would become one grand yellow fever hospital, and the finale that our whole country would be decimated. Not with any feeling of panic, but with a deliberate calmness I tried to surmise where the end would be, without any organization with power and means to render relief and succor. I determined to make one effort to put on foot, if possible, something for their relief.

It did seem as if every one in our State, with the single exception of our worthy Secretary, Dr. Johnston, had quietly folded their arms and were witnessing the terrible besom of destruction which was taking our friends and loved ones at such a fearful rate per day. Yes, with a seemingly stolid and stoical apathy, every one had determined to let fate do her worst.

I communicated to General Lowry my intention to telegraph Drs. Wirt Johnston and M. S. Craft to meet me at our quarantine station to see what could be done to aid our suffering people, and asked if I would include Maj. E. Barksdale—would he not join me in the telegram and go himself and lend his aid and counsel in trying to ferret out some plan for their relief, to which he readily consented.

We accordingly had the meeting the next day on the bank of Pearl river, at which time Dr. Johnston informed me that I had been elected *pro tempore* President of the State Board of Health, during the temporary absence of Dr. Kells, our President.

It was not only the fever-stricken ones, but all were in imminent danger of great suffering for want of food. It was true that the munificent donations from our Northern brethren and from the Masons, Odd Fellows, and other benevolent and charitable societies and institutions were flowing to us like one grand and mighty stream of charity and love, fed with its thousand fountains of affection. Yet it was apparent to all that Mississippi, in the capacity of a State, was doing nothing to supply the wants or to ameliorate the suffering of her

stricken people. Some of the Northern papers were already calling attention to the fact, and the people all over our State were clamorous for State aid.

The result of our conference was: That a telegram be sent to his His Excellency Gov. J. M. Stone at Iuka, asking a conference with him personally. It was sent, signed by C. A. Rice, M. D., President *pro tem.* State Board of Health; Wirt Johnston, M. D., Secretary State Board of Health; M. S. Craft, M. D., President Board of Health, Jackson; E. Barksdale and Robt. Lowry on behalf of the citizens.

He promptly accorded to our request, and as soon as rail could bring him, met us on the 10th of September. He was fully impressed with the greatest sympathy for our suffering people, but could see no plan for their relief from State aid, as there was no power vested in him to take State money and apply it in any way not fully authorized by law; besides the Treasurer was the custodian of our treasury, and his securities responsible for its mal-appropriation. 'Tis just to the Governor to say that he remarked that there was nothing consistent with honor that he would not do for the people of Mississippi. In this you will see that we failed to get funds to go to their relief.

It is proper to here state that at the time of this conference the fever had not attacked more than one-third of the population who were in the infected places, and we especially desired to furnish the means of isolating them from those places by establishing camps at some place most convenient and desirable for the same, and to provide them with tents or means of shelter, food, and, if necessary, with medical attention, nurses and medicines. We believed that thus isolating those who had not contracted the disease would have prevented a large sacrifice of human life. Besides Vicksburg was already threatened with a bread riot, and we deemed it important that some means be adopted by which those that were out of employment might be provided for until opportunities could present for them to earn a living for themselves and families by remunerative labor, as well as to provide all the aid we could for our fever stricken people.

In the meantime, and even from the very inception of the epidemic in New Orleans, Dr. Wirt Johnston was busy sending out circulars and writing to every part of the State advising local Boards and corporate authorities of towns as to the proper means of disinfection, sanitation, and urging strict quarantine at every point *as the only means of safety*, demonstrating, for one of his years in the profession, a mind more mature than most of our sages. I feel, gentlemen, that too much cannot be said in praise of his energy and zeal in trying to prevent the horrible scourge through which we have just passed, as well as the timely aid and assistance sent to those everywhere

in distress as far as it was possible for him to do. There was sent from the office of the State Board of Health circulars of warning and advice to refugees, to prevent their infection upon their return to their homes.

And now that we have assembled and our worthy President is again with us, he will preside over our deliberations, with every effort, I know, upon his part to aid us in arriving at some solution of the difficult and delicate questions which will necessarily come before us.

Respectfully,

C. A. RICE, M. D.

The Secretary read the following communication from the President, Dr. Kells:

To the Mississippi State Board of Health:

GENTLEMEN—I take this occasion to again thank you for the honor conferred upon me by making me your President. I also wish to state to the Board, that it has been my custom for years to be absent from the State during the hot months, and it may be in the minds of the members that the officers should at all times be within the bounds of the State, I therefore resign my position as President, and hope you will elect some one else to meet all the necessities of this important position.

Respectfully,

R. KELLS, President.

During the consideration of the communication Dr. Kells retired, and, on motion of Dr. Hill, Dr. Phares was called to the chair.

The following resolution, offered by Dr. Hill, was adopted:

Resolved, That while we appreciate the reasons assigned by Dr. Kells for his resignation of the office of President of this Board, we respectfully decline to accept the same, and request him to serve out his term.

On motion of Dr. Taylor, Drs. Hill, Johnston and Kells were appointed a committee to prepare resolutions of respect to the memory of Drs. Hughes, Whitehead, Cage and Compton, deceased members of this Board.

The following, offered by Dr. Johnston, was adopted:

Resolved, That the President of the Board be and is hereby empowered to appoint a President *pro tempore,* in the event of his temporary absence from the State.

The Secretary made his report, which was received and adopted.

The following, offered by Dr. Hill, was adopted:

Resolved, That while we do not advise the disuse of the popular disinfectants in purifying the exhalations from cesspools, privies and other foul accumulations, we desire to announce the fact that observation and experience in the late terrible epidemic do not demonstrate their efficacy, and reliability in destroying the germs or cause of yellow fever.

By Dr. Taylor:

Resolved, That in the opinion of this Board the true cause of yellow fever is exotic, and that it only exists in this State by importation; that it is transportable in vessels, railroad cars, clothing, goods, etc., and that efficient quarantine regulations are competent to exclude it from the State.

Adopted.

By Dr. Johnston:

Resolved, That a committee be appointed to draft suitable resolutions requesting the Governor to convene the Legislature in extra session to consider the question of amending the health laws of the State, so as to enable the health authorities to more effectually guard against epidemic diseases.

Adopted. Committee: Drs. Taylor, Phares and Hill.

On motion, the Board adjourned until 4 o'clock, P. M.

EVENING SESSION.

The Board was called to order at 4 o'clock, P. M. The President in the chair.

The Secretary read letters from the following members expressing their regrets at being unable to attend the meeting of the Board: Drs. Dancy, McCormick, Smythe and Wharton.

On motion of Dr. Taylor, the 1st of January, next, was agreed upon as the date on which to begin the Registration of Vital Statistics, and the Secretary was directed to distribute the necessary books and blanks as soon as practicable, with proper instructions to the circuit clerks. The Secretary was also directed to prepare an address to the medical profession of the State, asking their co-operation in securing a full registration.

By Dr. Hill:

Resolved, That the State Board of Health desires to express its high appreciation of the efforts and achievements of the local Boards of Health throughout the State, during the late epidemic of yellow fever, and to urge upon them the importance of perpetuating their organizations in accordance with existing laws, thereby being ever ready to combat any epidemic or infections diseases that may threaten the health of their respective communities, and aid in preventing the prevalence of local diseases as far as practicable. The State Board is fully alive to the paramount importance of adopting all possible measures to prevent another epidemic invasion of our State, and confidently relies on the continued aid and co-operation of the local Boards.

Adopted.

The following, offered by Dr. Taylor, was adopted:

WHEREAS, It is possible, in the estimation of this Board, that

the poison or germs of yellow fever may survive through the winter, under favorable circumstances, in this latitude; therefore,

Resolved, That we earnestly recommend to local Boards of Health, and the authorities of all towns which have been infected during the past season, also the heads of all families in infected districts, the adoption of such measures as will insure the destruction of such poison, such as thoroughly overhauling and ventilating all rooms, closets, cellars, etc., in an atmosphere below the freezing point; also the enforcement of a thorough system of sanitary measures, including drainage, cleanliness, etc.

The Committee appointed to prepare resolutions of respect to the memory of deceased members reported as follows, through its chairman, Dr. Hill:

RESOLUTIONS OF RESPECT.

Death is always terrible—always touches the saddest and tenderest feelings of the human heart even under ordinary circumstances, but when numbers of our friends and dear ones are suddenly, simultaneously, or in quick succession stricken down by its ruthless power, it is hard for language to express the emotions that well up in our breasts and linger in our hearts. Such have we experienced in the unexpected but heroic death of four out of the fifteen members of our organization during the fearful epidemic of the past summer and fall. Drs. E. W. HUGHES, P. F. WHITEHEAD, A. H. CAGE and W. M. COMPTON, cherished members of this Board, have passed to the spirit land and peacefully rest from their labors. They were men of whom any State would feel proud, any profession feel honored, any people mourn in their death. As physicians, they were all among the most eminent in the State, and as citizens honored and esteemed for their moral, social and civic virtues.

As a feeble expression of our sorrow and profound sense of grief at this appalling and inscrutible infliction of Providence, be it—

Resolved, That in the noble and untimely death of our late associates, Drs. HUGHES, WHITEHEAD, CAGE AND COMPTON, we have lost four of our most useful, able and efficient members, and the State correspondingly in physicians and citizens.

Resolved, That we will ever treasure their memories with increasing fondness, and never cease to associate their names, deeds and virtues with the organization and early history of this Board, and the medical annals of the State.

Resolved, That we extend our sincere condolence and sympathy to the families of our deceased friends, and commend

to them the soothing mercies and comforting influences of an all-wise Creator.

Resolved, That we devote a page of our Record Book to the memory of each of these deceased members.

Resolved, That a copy of this tribute of respect be sent to the surviving members of the families of our lamented friends, and it be recorded with the minutes.

The committee appointed to prepare resolutions requesting the Governor to convene the Legislature in extra session, reported through its Chairman, Dr. Taylor, as follows:

WHEREAS, The State of Mississippi has just passed through a terrible epidemic of yellow fever, which fell upon our towns and communities very poorly prepared to meet the scourge; and—

WHEREAS, A similar visitation is liable to recur, indeed may be expected in accordance with former precedents, to recur next year; and—

WHEREAS, No adequate legislation or authority exists to counteract such visitations; and—

WHEREAS, It is eminently desirable that some uniform and more efficient precautionary and preventive measures should be adopted and enforced to protect the citizens of the State from such visitations, not only of yellow fever but also of cholera, small-pox and all other diseases capable of producing such widespread destruction of life, and distress among the people; and—

WHEREAS, It is also highly important that a Commission should be appointed and empowered to investigate the causes and history of the late epidemic with the view to prevent future visitations; therefore,

Resolved, That the State Board of Health earnestly recommend that the Governor of the State convene the Legislature in extra session to enact such legislation as may be necessary to accomplish said ends.

The report was received and adopted.

At 9 o'clock P. M., the Board adjourned to meet next morning at 9 o'clock.

SECOND DAY.

DECEMBER 11th, 1878.

The Board met at 9 o'clock, A. M. The President in the chair.

The minutes of the preceding day were read and approved.

The following resolution, offered by Dr. Hill, was adopted:

Resolved, That the President, Secretary, and Dr. Rice be

appointed an Executive Committee of this body, with full power to transact any business necessary during the intervals of its meetings. This Committee shall meet at any time on the call of the President or Secretary, and shall preserve a record of its proceedings, which shall be submitted to the Board of Health in the form of a report at its next meeting. The President and Secretary of the Board of Health shall be President and Secretary of the Executive Committee, respectively. Any two members of this Committee shall constitute a quorum for the transaction of business.

By Dr. Johnston:

Resolved, That the thanks of this Board are due and are hereby tendered to Mr. Geo. D. Lawrence, General Passenger Agent of the Lookout Mountain Line, for the courtesy extended in granting free passes over his line to the delegates from this Board to the meeting of the American Public Health Association.

At 12 o'clock, M., the Board called on the Governor in a body and presented the resolutions adopted on yesterday, requesting an extra session of the Legislature to amend the health laws of the State.

On motion, the Secretary was requested to prepare a memorial to Congress on the subject of a National Sea-Coast Quarantine.

On motion, the Secretary was also requested to prepare a memorial to Congress asking that the Catalogue of the Library of the Surgeon-General's office be published.

The following Committees were appointed:

Publication, Stationery and Printing—Drs. Kells, Rice and Johnston.

Legislation—Drs. Taylor, Phares and Wright.

On motion, the Board adjourned to meet at Aberdeen on the 6th of April, 1879.

SECRETARY'S REPORT

FOR 1878.

To the Board of Health of the State of Mississippi:

GENTLEMEN—I have the honor to submit the following report of the transactions of this office during the year 1878:

In January, Dr. A. G. Smythe, a member of the Board reported that he had discovered *trichnæ spiralis* in the flesh of some hogs, and at his instance the following circular was issued:

TRICHINA SPIRALIS.

OFFICE MISSISSIPPI BOARD OF HEALTH,
JACKSON, January 7th, 1878.

Dr. A. G. Smythe, Sanitary Commissioner First Congressional District, has informed this office that he has discovered the *Trichna spiralis* in the flesh of hogs recently slaughtered in Lee county.

As these parasites, when introduced into the human system, produce a most alarming form of disease, it is well to know how to detect them in trichinous pork, and the means of destroying their vitality.

They exist in the muscles, and when they become finally attached, a capsule is formed around them, giving to the muscle a gray speckled appearance, as if "thickly sprinkled with the eggs of some small insect," being quite distinct from the red muscle. The capsules contain the thread-like worm wound up spirally. Before the *trichnæ* become encapsuled they are invisible to the naked eye and in the encapsuled state, before cretification has commenced, they are difficult of detection without the aid of a lens. The microscope should always be employed.

It is probable that the usual methods of curing or pickling pork, by salting, smoking, etc., only kills these parasites nearest the surface. Raw ham and slightly smoked sausages have been known to produce poisoning.

Imperfect cooking by roasting, broiling or frying only kills the *trichnæ* on the surface; in the parts distant from the surface they remain alive. It requires *thorough* cooking to destroy their vitality. The meat should be subjected to the tem-

perature of boiling water for a sufficient time to insure that every particle has been acted upon by that degree of heat.

WIRT JOHNSTON, M. D.,
Secretary State Board of Health.

During the month of March an outbreak of small-pox occurred in Marion county, and in June a more limited outbreak occurred in Panola county. When reported to this office five hundred copies of the following circular, on the means of prevention of the disease, were distributed in those localities and the surrounding country.

SMALL-POX.

OFFICE STATE BOARD OF HEALTH, MISSISSIPPI.
JACKSON, March, 1878.

The appearance of small-pox in several places in our State, and the danger of the spread of the disease, calls for a word of warning and advice from those who have been constituted the guardians of the public health. To be forewarned should be to be forearmed.

SMALL-POX IS PRE-EMINENTLY A PREVENTABLE DISEASE.

It is preventable because we possess the means by which we may reasonably expect to keep it from our homes, and from our community. It never visits either except as those means known to be able to prevent it have been neglected.

We urge upon the citizens of Mississippi, upon the constituted authorities of every county, town, or village within its borders, and especially upon physicians, to institute such measures as will serve to stay the progress of the disease. The measures to be instituted are

VACCINATION AND RE-VACCINATION.

But to secure this protection three conditions must be carefully observed:

1st. The virus must be pure and vigorous.

2nd. The operation must be skillfully and properly performed.

3rd. Re-vaccination must be frequently practiced to test the returning susceptibility of the system to the small-pox contagion.

By a strict and universal observance of these rules, it is believed that small-pox might be stamped out of existence. To neglect such rules is to endanger not only the life of him who neglects them, but also the lives of those with whom he associates. There can be no valid excuse for such neglect.

With regard to re-vaccination the facts are, that a certain number of persons are protected for life by one vaccination, while the protection of others extends to but a limited and variable period. Hence as we are without the power to distinguish between these classes, re-vaccination is as essential as a primary operation.

ISOLATION.

Thoroughly isolate every case that may occur, and keep it so isolated until all danger that the disease can be communicated is past. If the patients be kept in a private house it is better that the uppermost rooms of the house be used for the purpose—every person in the vicinity should be at once vaccinated without regard to any previous operation.

DISINFECTION.

At the close of the disease, it would be best to destroy the clothing and bedding, but where this is not done, articles which can be so treated should be disinfected by being subjected to the action of boiling water, or can be baked in an oven at a temperature of not less than 212 degrees. Such articles as cannot be so treated should remain in the room and be subjected to

SULPHUROUS FUMIGATION,

Which is effected by placing about three pounds of sulphur in a safe and convenient vessel in the room with the doors, windows and chimney flues closed, and ignite it. The room should remain closed ten or twelve hours.

Ventilation, and painting the wood work, white-washing and re-papering the walls, will complete the process and fit the rooms for re-habitation.

ROBERT KELLS, M. D., President.

WIRT JOHNSTON, M. D., Secretary.

COUNTY AND MUNICIPAL BOARDS OF HEALTH.

The amendment, passed by the last Legislature, to the Act creating this Board, as you know, provides for the organization of county and municipal Boards of Health throughout the State. In order to effect these organizations in the counties, in March, a copy of the following communication was mailed to the President of the Board of Supervisors in each county in the State:

STATE BOARD OF HEALTH, MISSISSIPPI,
OFFICE OF SECRETARY,
JACKSON, March, 1878.

To the Board of Supervisors:

Inclosed you will find two pamphlet copies of the law amending the Act creating a State Board of Health; also a circular addressed to the County Board of Health. Your attention is respectfully invited to the provisions of this law. When you shall have elected your County Board of Health in accordance with the provisions of Section 14, please have the kindness to hand them one of the pamphlets containing the law, and the circular addressed to them. Please also furnish this office with the name and post-office address of each of the members so elected. Very respectfully,

WIRT JOHNSTON, M. D.,
Secretary.

A copy of the following communication was inclosed, to be handed to the Board of Health when elected:

STATE BOARD OF HEALTH, MISSISSIPPI,
OFFICE OF SECRETARY,
JACKSON, March, 1878.

To the County Board of Health:

I have mailed to the Board of Supervisors of your county, for your guidance, a pamphlet containing a law amending the Act creating a State Board of Health.

In order to secure to the public, without delay, the great good that must result from a well conducted system of Public Sanitation, it is earnestly hoped that you will meet as soon as practicable and organize in accordance with the provisions of section 14 of the law. That you will have it in your power to do much for the protection of life and health, that will redound to your credit, there can be no doubt.

Working in a common cause, I trust the intercourse between your Board and the State Board, may be mutually pleasant and instructive, and that it may be characterized by that harmony and concert of action so necessary to the achievement of great results.

When you shall have organized, please have the kindness to communicate with this office.

Very respectfully, WIRT JOHNSTON, M. D.,
Secretary.

It was regarded important that a uniform set of Rules should be adopted by each local Board, and with this object in view a copy of the following, which, with an unimportant exception are those in use in the State of Michigan, were sent, for adoption to each Board as soon as it reported to this office:

RULES AND REGULATIONS RECOMMENDED BY THE STATE BOARD OF HEALTH OF MISSISSIPPI, FOR ADOPTION BY LOCAL BOARDS OF HEALTH THROUGHOUT THE STATE.

For Prevention of Disease.

RULE 1. No privy-vault, cesspool, or reservoir into which a privy, water-closet, stable or sink is drained, except it be water tight, shall be established or permitted within fifty feet of any well, spring, or other source of water used for drinking or culinary purposes.

Reason. Soil, especially if it be sandy loam or gravel, or clay with inclined strata or layers, is often an unsuspected conductor of the liquid contents of such receptacles to wells or springs of water. Many well authenticated cases of typhoid fever and other dangerous and often fatal diseases have been traced to the use of water so contaminated.

RULE 2. Earth privies, or earth closets, with no vault below the surface of the ground, shall be excepted in Rule 1, but sufficient dry earth or coal ashes must be used daily to absorb all the fluid parts of the deposit, and the entire contents must be removed monthly.

Reason. Dry earth or coal ashes are nearly complete disinfectants if used in sufficient quantities to absorb all the fluids.

RULE 3. All privy-vaults, cess-pools or reservoirs named in Rule 1 should be cleaned out at least once a year; and from the first of May to the first of November of each year shall be thoroughly disinfected by adding to the contents of the vault, once every month, one or two pounds of copperas dissolved in a pailful of water.

Reason. During the hot season putrescent gases are given off from the decomposing excreta in such vaults. These gases are not only very offensive, but are frequently the cause of dangerous diseases. They contain compounds of ammonia, which are decomposed by solution of copperas and the foul odor destroyed. In a family vault two pounds of copperas a month is usually sufficient. In vaults used by a large number of persons, five or more pounds of copperas should be used monthly.

RULE 4. No privy-vault or cesspool shall open into any stream, ditch or drain, except such sewers as are covered and well protected.

Reason. Same as for Rule 1.

RULE 5. Within the limits thus bounded: ———— which area shall constitute health limits, no night soil or contents of cesspools shall be removed unless previously deodorized by mixing with solution of copperas; and during removal the material shall be covered with a layer of fresh earth,

except the removal be by the "Oderless Excavating Process."

Reason. Same as for Rule 3.

RULE 6. All sewer drains that pass within fifty feet of any source of water used for drinking or culinary purposes shall be water tight.

Reason. The danger of contaminating the water.

RULE 7. No sewer drain shall empty into any lake, pond or other source of water used for culinary purposes, nor into any standing water within the jurisdiction of this Board.

Reason. Same as for Rule 1.

RULE 8. No house offal, dead animals, or refuse of any kind shall be thrown upon the streets or public highways, or left exposed by any person, and no butcher, fish monger or vendor of merchandise of any kind, shall leave any refuse upon the streets, or uncovered by earth upon the lots of this city [village or county]; and putrid and decaying animal or vegetable matters must be removed from all cellars and out-buildings, on or before May first in each year.

RULE 9. All families, hotels, restaurants and others accumulating garbage are required to have a proper covered receptacle for swill or house offal, and to cause the contents to be regularly removed as often as twice a week between the first day of May and the first day of November, and once a week at all other seasons.

Reasons for 8 *and* 9. Decomposing animal and vegetable matters are the sources of poisonous gases, dangerous to health.

RULE 10. No hogs shall be kept in enclosures, within the jurisdiction of this Board, within eighty rods of any dwelling, except in pens with floors, kept entirely free from standing water, and regularly and freely disinfected.

The Board will order the removal of such animals at any time, when they appear to be prejudicial to the public health, safety, or comfort.

Reason. Same as for 8 and 9.

RULE 11. No animals affected with an infectious or contagious disease, shall be brought or kept within the limits of the jurisdiction of this Board, except by permission of the Board. No diseased animal, or its flesh, and no decayed, diseased, or unfit meat, fish, vegetables, or fruit, or diseased, impure, or adulterated milk or other article, shall be sold or offered for sale as food.

RULE 12. No slaughter house or abattoir shall be established or used as such within the jurisdiction of this Board, unless kept free from all obnoxious smells, and all offal be removed every day; and no melting or rendering house, and no place for manufacturing or other business *giving rise to obnoxious or injurious vapors or odors*, shall be established or used as such within the jurisdiction of this Board, except by its special permission and location.

FOR PREVENTING THE SPREAD OF INFECTIOUS AND CONTAGIOUS DISEASES.

Vaccination.

RULE 13. Every child should be vaccinated before two years of age; and this Board recommends that all persons be revaccinated as often as once in five years.

RULE 14. All incorporated manufacturing companies within the jurisdiction of this Board shall cause each new employe to be vaccinated on entrance, unless proof is furnished of previous successful vaccination.

RULE 15. No person shall become a member of any public school within the jurisdiction of this Board until vaccinated, or furnishing a certificate from some physician that he or she has been successfully vaccinated.

RESTRICTION AND DESTRUCTION OF INFECTIOUS AND CONTAGIOUS MATTER.

RULE 16. Any householder in whose dwelling there shall occur a case of cholera, yellow fever, scarlet fever, diphtheria or small-pox, shall immediately notify the Board of Health of the same, and, until instructions are received from the Board, shall not permit any clothing or other property that may have been exposed to infection to be removed from the house, nor shall any occupant take up residence elsewhere without the consent of the Board.

RULE 17. Any physician who may be called to a case of any of the diseases specified in the foregoing rule shall at once report such case to this Board and receive instructions in regard thereto; and whenever there shall come under the observation of any physician such uumber of cases of measles, typhoid fever, dysentery, whooping-cough, or cerebro-spinal meningitis as in his opinion to justify the belief that a considerable epidemic thereof exists, he shall at once report the same to the Board, with such suggestions, in regard thereto, as may seem to him best.

RULE 18. No person or article liable to propagate a dangerous disease shall be brought within the jurisdiction of this Board without the special consent and direction of the Board; and whenever it shall come to the knowledge of any person that such person or article has been brought within such limits, he shall immediately give notice thereof to this Board, together with the location thereof.

RULE 19. No person sick with any of the diseases specified in Rule 16 shall be removed at any time except by permission and under direction of the Board.

RULE 20. Persons affected with any of the diseases specified in Rule 16, and all articles infected by the same, shall be imme-

diately separated from all persons liable to contract or communicate the disease, and none but physicians, nurses and the clergyman of the family shall be allowed access to persons sick with these diseases.

RULE 21. Persons recovering from any of the diseases specified in the preceding rules, and their nurses, shall not leave the premises till they have been thoroughly bathed, and their clothing disinfected by washing in boiling water, or heating to 250° Fah.

RULE 22. All vessels used by such patients shall be disinfected by solution of carbolic acid, copperas, or chloride of lime, then emptied, their contents buried in earth, and the vessel cleansed with boiling water.

RULE 23. All personal clothing, bedding, towels, etc., and all articles in contact with or used by the patient, shall be washed in boiling water, or exposed to a temperature of 250° Fah.

RULE 24. Infected feather beds, pillows and hair mattresses shall have their contents romoved and disinfected by thoroughly exposing them to the fumes of burning sulphur, and their ticks washed in boiling water; but no article shall be burned without the direction of the Board. Infected straw beds and moss mattresses shall have their contents removed and burned, and their ticks washed in boiling water.

The Board earnestly asks the co-operation of every individual to secure the desirable sanitary conditions, to promote which the foregoing rules are framed.

With the rules the following communication was sent to the President of each Board:

OFFICE MISSISSIPPI STATE BOARD OF HEALTH,
JACKSON, MISS., May 29, 1878.

DEAR DOCTOR—I send you by to-day's mail a copy of Rules and Regulations recommended by the State Board of Health, for adoption by local Boards throughout the State. The Attorney-General gives as his opinion that we should attempt to enforce all of them.

We think it important that the county Boards should adopt a uniform set of Rules, so as to insure harmonious action throughout the State. Would it not be well to have them published in the papers in your county?

Very truly yours, WIRT JOHNSTON, M. D.,
Secretary State Board of Health.

THE EPIDEMIC OF 1878.

I will now briefly refer to the work of this office during the recent terrible epidemic of yellow fever.

On July 27th a communication was sent to the late President of the Warren County Board of Health, at Vicksburg, suggesting the organization of a City Board.

On July 30th a copy of the following letter was sent to the Mayors of Osyka, Summit, Fort Adams, Rodney, Natchez and Magnolia:

JULY 30th, 1878.

DEAR SIR—In view of the prevalence of yellow fever in New Orleans, would it not be well for your city to organize a Board of Health, and establish a quarantine and adopt such other measures as would tend to protect your city.

Section 19 of an Act to amend the Act creating a State Board of Health gives you the authority to organize a Board. See page 137, Laws of Mississippi, 1878.

My advices from New Orleans, up to noon yesterday, are that 80 cases of fever had occurred, with 33 deaths.

Please let me hear from you.

Very truly yours,

WIRT JOHNSTON,
Secretary State Board of Health.

On July 31st a similar letter was written to the Mayors of McComb city, Brookhaven, Bogue Chitto, Beauregard, Grand Gulf, Crystal Springs and Hazlehurst. On August 1st I wrote on the same subject to the Presidents of the Jackson and Harrison County Boards, and to the Mayors of Terry and Warrenton. On the 2nd to the Mayors of Johnston Station, Byram, Grenada, and Greenville. These points were selected to communicate with as it was thought they were the most exposed.

On August 5th the following letter was written to the late Dr. J. L. Milton, then Mayor of Grenada, in reply to one received from him under date of the previous day:

AUGUST 5th, 1878.

DEAR SIR—Your letter has been received. In reply I would suggest that you elect a Board of Health, and give them the power to adopt the sanitary rules for your town. The question of quarantine would of course receive their attention. Sulphate of Iron (copperas) and Carbolic Acid would, perhaps, be the best disinfectants for your use. The former is used to disinfect privies, cess-pools, drains, sewers and all vessels and places receiving the discharges of the sick. It decomposes the sulphuretted hydrogen and the ammoniacal compounds so poisonous and offensive in privy vaults. It may be used by dissolving 8 or 10 pounds in 8 or 10 gallons of water. Add to the solution one pint of crude carbolic acid. This mixture should be freely used. Carbolic acid may be used for the same purposes, but its range of application is much greater.

It is supposed to destroy disease germs, and for this purpose a solution of not less than two per cent. should be employed. By its antiseptic property it is supposed to prevent those kinds of fermentation and decay which aid in propagating epidemics.

Dry earth may be used to absorb effluvia from decaying animal and vegetable matter and, appropriately, human excreta.

Crude carbolic acid can be purchased at about seventy-five cents per gallon.

I send you a copy of our quarantine ordinance, and a copy of quarantine rules. As soon as published I will send you our sanitary rules.

Will be glad at any time to assist you in any way that may be in my power.

Very truly yours,
WIRT JOHNSTON,
Secretary Mississippi State Board Health.

A little later a copy of the following circular was mailed to the Mayors of all the towns on railroads and on the Mississippi river:

OFFICE OF MISSISSIPPI STATE BOARD OF HEALTH,
JACKSON, MISS., August 7th, 1878.

DEAR SIR—In view of the sickly season and the prevalence of yellow fever in New Orleans, would it not be well for you to organize a Board of Health, and adopt such measures as would protect your town and improve its sanitary condition?

Section 19 of an Act to amend an Act creating a State Board of Health, gives you the authority to organize a Board. See page 137, Laws of Mississippi, 1878.

Please let me hear from you.

Very respectfully yours,
WIRT JOHNSTON, M. D.,
Secretary State Board of Health.

Later in the season when the disease had assumed larger proportions at New Orleans, and prevailed at Grenada, Vicksburg and other places, it becoming evident that our entire State was in danger, the following was sent to the Presidents of County Boards of Health:

OFFICE OF MISSISSIPPI STATE BOARD OF HEALTH,
JACKSON, MISS., Aug. 26th, 1878.

DEAR DOCTOR—In view of the extensive prevalence of yellow fever, I would earnestly recommend that you call a meeting of your Board and insist that your Board of Supervisors, at once, quarantine your county. Section 2739, Revised Code of 1871, gives them the authority to do so.

Very truly yours,
WIRT JOHNSTON, M. D.,
Secretary State Board of Health.

And in counties where there were no Boards of Health, the following was sent to the Presidents of the Boards of Supervisors:

OFFICE OF MISSISSIPPI STATE BOARD OF HEALTH,
JACKSON, MISS., Aug. 26, 1878.

DEAR SIR—In view of the extensive prevalence of yellow fever, I would earnesily recommend that you call a meeting of your Board at once and quarantine your entire county. Section 2739, Revised Code of 1871, gives you the authority to do so.

Very truly yours,
WIRT JOHNSTON, M. D.,
Secretary State Board of Health.

The following circular on disinfectants was also freely distributed:

OFFICE OF
MISSISSIPPI STATE BOARD OF HEALTH.

DISINFECTANTS.

SULPHATE OF IRON (*Copperas.*)

Application.—To disinfect privies, cess pools, drains, sewers. and all vessels and places receiving the discharges of the sick. It decomposes the sulphuretted hydrogen and the ammoniacal compounds so poisonous and offensive in privy vaults.

How Used.—Dissolve eight or ten pounds of the copperas in eight or ten gallons of water. Add to this solution, one pint of the impure carbolic acid. The solution will be rendered more complete if hot water is used. A privy which accommodates an ordinary sized household will require at least one-eighth of this quantity twice every week during the hot summer months. Masses of filth in privies, sewers or drains should be thoroughly saturated with it, at brief intervals, until all offensive odors are gone.

CARBOLIC ACID.

Application.—Mixed in the proportion of one part of the acid to from forty to one hundred parts of water, carbolic acid has a wide range of application as an antiseptic and disinfectant. For purposes of thorough destruction of disease germs, a solution of not less than two per cent. of the acid should be employed. When used to disinfect clothing, a solution of one part of the acid to one hundred parts of water would be an appropriate strength.

Carbolic acid is believed to be an effectual agent in the destruction of every communicable virus of disease, and by its antiseptic property prevents those kinds of fermentation and decay which aid in propagating epidemics.

How Used.—In solution in water of varying strength, according to the purposes to which it is to be applied. It is especially adapted to disinfect *sewage, foul grounds, drains, sinks, foul heaps of manure or garbage, stables, privies* and the air of a foul place in which any pestilential disease exists.

SULPHUROUS ACID GAS.

Application.—To disinfect rooms and infected clothing. Applied only in case of *unoccupied* rooms. To be effectual in destroying disease germs, the fumes must be so strong that they would destroy human life.

How Used.—Place in an earthen vessel or iron kettle containing a small quantity of ashes, a few live coals, upon which place from one to four pounds of sulphur, in powder or fragments, according to the size of the room. One and one-half ounces is the proper quantity to each 100 cubic feet of space.

To guard against accident by fire, it is well to place the vessel on some fire-proof article or suspend it over a tub of water. As soon as the sulphur is ignited, the room having previously been rendered tight, should be closed and remain closed for twelve or twenty-four hours.

Ventilation, and painting the wood-work, white-washing and re-papering the walls, will complete the process, and fit the room for re-habitation.

DRY EARTH.

Application.—To absorb effluvia from decaying animal and vegetable matter, and appropriately, human excreta.

Dry earth is nearly a complete disinfectant, if used in sufficient quantities to absorb all moisture. It should be abundantly applied.

There are a number of other disinfectants, but the above will, it is believed, meet all ordinary demands.

The efficiency of disinfectants in all cases will depend upon the thoroughness with which they are applied. It may be remarked that they are almost always used too sparingly.

The first information received at this office of the existence of a number of cases of yellow fever in the limits of our State, was a telegram from Grenada on August 12th, reporting fifty cases in that town. This report was at once telegraphed to the health authorities throughout the State.

It was some time after quarantines began to be established before we were aware of any law authorizing them, although several lawyers had been consulted. Finally Dr. Rice, a member of this Board pointed out Section 2739, Revised Code, 1871.

On account of the interruption of mails during the epidemic much of our correspondence was necessarily conducted by telegraph.

On October 21st, after the epidemic had somewhat abated, I prepared the following circular, which was distributed at places where the disease prevailed, and a copy was sent to each newspaper in the State:

TO THE AUTHORITIES AND CITIZENS OF TOWNS WHERE YELLOW FEVER HAS PREVAILED.

OFFICE OF MISSISSIPPI STATE BOARD OF HEALTH,
Jackson, Miss., Oct. 21, 1878.

As the time approaches when those who have fled from the pestilence will think of returning to their homes, it becomes our duty as guardians of the public health to warn them of the danger to which they may be exposed by returning too early, and to offer some words of advice. It is important to know that the yellow fever germ may remain in a state of activity inside of houses even when the temperature on the outside has reached a point sufficiently low to destroy it. It may adhere to bedding, clothing, carpets, cushioned furniture, etc., for a long time. Thus the disease may be contracted after an epidemic has entirely abated. It has been asserted that after a mild winter, the germ may remain in a state of inactivity in the warm atmosphere inside of houses, to be revivified by the return of summer, and thus an epidemic be produced.

We earnestly suggest to all to observe the following rules:

I. Do not return to your homes until after a freeze. A frost may only check the disease for a time, not effectually arresting it, and the weather becoming warm again, it starts afresh. When the disease abates before cold weather it is usually for the want of material, and you may furnish fresh food for it.

II. Before you occupy your houses have them well ventilated by opening all the doors and windows, including those of cellars and closets. Trunks and boxes should be opened and their contents exposed to the air. This ventilation should be continued for several days. Bedding, clothing, carpets, etc., should be hung out doors: cotton and linen fabrics may be disinfected by being placed in boiling water, where they should remain for at least 30 minutes.

III. Houses or apartments that have been occupied by yellow fever patients should be subjected to sulphurous fumigation, which is effected as follows: Place in an earthen vessel or iron kettle containing a small quantity of ashes, a few live coals, upon which place from one to four pounds of sulphur, in powder or fragments, according to the size of the room. One and one-half ounces is the proper quantity for each 100 cubic

feet of space. To guard against accident by fire, it is well to place the vessel on some fire-proof article, or suspend it over a tub of water. As soon as the sulphur is ignited, the room having previously been rendered tight, should be closed and remain closed for twelve or twenty-four hours. To be effectual in destroying disease germs, the fumes must be so strong that they would destroy human life. Sulphurous acid gas is a powerful bleaching agent, and care should be taken to remove such things as would be damaged by it.

Ventilation and painting the wood work, white-washing and re-papering the walls, will complete the process, and fit the apartment for re-habitation.

IV. All personal clothing, bedding, towels and other articles that have been in contact with or used by yellow fever patients should be well washed in boiling water, or exposed to a temperature of 250° Fah; and all feather beds, pillows and hair mattresses used by patients, should have their contents removed and disinfected by thoroughly exposing them to the fumes of burning sulphur, and their ticks washed in boiling water. Straw beds and moss mattresses should have their contents removed and burned, and their ticks washed in boiling water. Really the best plan would be to burn the bedding used by patients, but in cases where persons' means would not justify that procedure, the course suggested above is thought to be the best mode of disinfection.

V. All vessels that have been used by patients should be disinfected by a solution containing one part of carbonic acid to forty parts of water, and then cleansed with boiling water.

It has been stated that the same degree of cold that kills the banana plant, is necessary to destroy the yellow fever germ.

C. A. RICE, M. D., President pro tem.

WIRT JOHNSTON, M. D., Secretary.

Should our State again be so unfortunate as to be visited by another epidemic, I sincerely hope this Board will be invested with the power and means to act more efficiently.

It is with profound sorrow that I announce the deaths of four of the members of this Board, Dr. W. M. Compton, from the State at large, the pioneer in sanitary science in this State; Dr. P. F. Whitehead, Sixth District; Dr. E. W. Hughes, Third District, and Dr. A. H. Cage, Fourth District, all of whom fell in the discharge of their professional duties during the recent terrible epidemic. They were all eminent in their profession and useful members of this Board, and they will be sadly missed in our deliberations.

MEMORIAL TO CONGRESS ON THE SUBJECT OF A NATIONAL QUARANTINE.

In accordance with your instructions I prepared the follow-

ing Memorial on the subject of a National Quarantine and transmitted to Hon. J. R. Chalmers, who presented it to Congress:

To the Honorable the Congress of the United States:

The terrible suffering, great loss of human life and injury to business occasioned by the epidemic visitation of yellow fever in our State during the past year, and the great apprehension that exists of a similar visitation at some future time, and the apparent necessity of every effort being made to avert so great a calamity, causes us as the guardians of the health of the citizens of our State, to appeal to the General Government and invoke its aid in our behalf.

Satisfied as we are, by the observance of proofs that we deem indisputable, that yellow fever is not indigenous in any one of the United States, and that it is an exotic disease, we are naturally led to consider the means by which its introduction into our country may be prevented. This question is one of the very greatest importance to those whose homes are in the Mississippi valley, and scarcely less important is it to the whole country. We believe that a quarantine system made rigid enough to absolutely prevent the importation of the disease would afford that protection.

The failure of such quarantine regulations as have heretofore existed at our Gulf and South Atlantic ports, has sufficiently demonstrated their inadequacy to afford to us that protection which we ask for the safety of our citizens; and inasmuch as the States have proven themselves powerless to successfully quarantine those ports, we do most earnestly recommend that Congress take such action as will make the quarantine of those ports as rigid and effectual as it is possible to be done. We do not ask for a National quarantine system which would supplant the existing quarantines established by the States, but for one that would supplement and strengthen them.

We desire to also state that we think it would be extremely unwise and injudicious for any law to be enacted that would in any way interfere with the internal sanitary regulations of the States, or deprive us of the right to establish an inter-State quarantine, for the reason that should the disease reach our shores, deprived of that right we would be left entirely at the mercy of the disease.

ROBT. KELLS, President,
Mississippi State Board of Health.

WIRT JOHNSTON,
Secretary State Board of Health.

REGISTRATION OF VITAL STATISTICS.

In regard to the Registration of Marriages, Births and Deaths, which was provided for by the Legislature during its last session, I desire to say, that the Board, at its meeting in April, adopted a resolution giving the President and Secretary the authority to fix the date at which the work should begin. The first of October was agreed upon as the time, and the books, blanks, etc., were prepared so as to be distributed on the first of September, but on that date it was found to be impossible to distribute them to the various counties on account of the quarantine restrictions on freights and mails. The amount ($250 00) allowed by the Legislature for the annual expenses of the Board, for books, blanks, stationery and printing, is so small that the material for the Registration had to be provided on a cheap scale to carry on the work for only fifteen months, and we would not have been able to do this much but for the liberality of Messrs. Power & Barksdale in agreeing to wait until 1879 for part of their pay.

The Board, at its meeting in December, fixed, by resolution, the first of January, 1879, as the date on which the work should begin, and as soon as practicable after your adjournment the books and blanks and a copy of the following circular letter and blank receipt were sent to the Circuit Clerks of the various counties in the State:

OFFICE OF MISSISSIPPI STATE BOARD OF HEALTH,
JACKSON, MISS., December 16th, 1878.

To the Circuit Clerk:

DEAR SIR: The amendment passed at the last session of the Legislature to the law creating a State Board of Health, provides for the Registration of Marriages, Births and Deaths by the Circuit Clerks. See pages 132, 133, and 134, sections 8, 9, 10, 11, 12 and 13, Laws of 1878. This Act requires that Physicians and others shall make a report or return to the Circuit Clerks of their respective counties, of the Births and Deaths occurring in their practice, and that the Clerks themselves shall obtain the required information in regard to Marriages.

The State Board of Health, at a recent meeting, determined upon the 1st of January, 1879, as the date on which the Registration should begin. I send you by mail a book in which to record the Marriages, Births and Deaths of your county, and blank forms on which Physicians and others are to make returns of Births and Deaths. You will please furnish the blank forms to those interested. They will be requested to call for them as they are needed. Your record should begin with the Marriages, Births and Deaths that occur on and after the 1st of January, 1879. The Record Book is to be preserved

in your office, and it is expected that you will furnish this office with a transcript of your books quarterly, viz: 1st April, 1st July, 1st October and 1st January, on blanks which will be furnished you.

You are especially requested, when you record the returns, to write all the items out in full, and when it is not possible to obtain the information required by law, to write in such space of the Record Book, the word "Unknown," that it may be evident the item has not been overlooked.

The object of the Registration is to obtain such records as will be of great value for both sanitary and legal purposes. It is evident that their value depends in great measure on their completeness, and it is hoped that you will so appreciate the objects of the law, as to secure for us your entire co-operation in the work. Very respectfully, WIRT JOHNSTON, M. D.,

Secretary State Board of Health, and
Superintendent of the Registration of Vital Statistics.

[*Please fill out and return.*]

OFFICE CIRCUIT CLERK..... .....COUNTY,
....., 187..

Secretary State Board of Health:

SIR: I have this day received from your office, for the use of this County, the following books and blank forms, for the Registration of Vital Statistics:

.....Record Book.
.....Blank Forms for Return of Births.
.....Blank Forms for Return of Deaths.
.....Blank Forms for Transcript.
....
....., Circuit Clerk.

On account of the weight of the packages containing the books and blanks they were shipped by express.

In order to enlist the interest of the medical profession in the registration two thousand copies of the following address were distributed in the State.

TO THE MEDICAL PROFESSION OF MISSISSIPPI.

OFFICE OF MISSISSIPPI STATE BOARD OF HEALTH,
JACKSON, MISS., Dec. 17, 1878.

GENTLEMEN—The amendment passed at the last session of the Legislature, to the law creating a State Board of Health, provides for the collection and registration of marriages, births and deaths—the vital statistics of the State.

At a recent meeting of the State Board of Health, the 1st of January, 1879, was determined upon as the date on which the work should begin.

We recognize the fact that this work cannot be done without your assistance and co-operation. From you must necessarily come the record of facts transpiring in your practice, and under your observation, which as isolated facts may possess no public interest, but which collected, analyzed and elaborated by a central board, will give a mass of information, from which may be deduced facts of surpassing value both to science and humanity. The registration of vital statistics is not only the very foundation of sanitary science, but puts on record matter of the highest value for legal purposes. Believing that you fully appreciate the importance of this undertaking, we appeal to you individually, with confidence, as members of a profession which has ever shown itself foremost in all works of philanthropy, and labors of science, for that support, that co-operation and that personal interest in the enterprise which will in itself be a guarantee of its success. The labor required of you is not great, and carefully prepared blanks, on which to make returns, will be sent to the Circuit Clerks of the different counties, to be furnished you on application, without cost.

The value of the registration will of course depend in a great measure on its completeness, and it is hoped that every birth or death occurring in your practice will be recorded. All the items connected with the returns are deemed of importance—some for legal and some for sanitary purposes—yet of all the items the single fact that there has been a birth or death, is much the most important.

We also ask your influence in securing the returns from midwives, parents or friends in all cases where no physician is in attendance, the law requiring this work of them as well as of you.

Below you will find the sections of the law relating to your duties.

Very respectfully,

Robt. Kells, M. D., President.
J. M. Taylor, M. D.,
John Wright, M. D.
T. D. Isom, M. D.,
S. V. D. Hill, M. D.,
A. G. Smythe, M. D.,
R. G. Wharton, M. D.,
P. J. McCormick, M. D.,
D. L. Phares, M. D.,
C. A. Rice, M. D.,
F. W. Dancy, M. D.,
Wirt Johnston, M. D.,
Secretary.

EXTRACT FROM

AN ACT to amend an Act entitled "an Act to create a State Board of Health for the protection of life and health and to prevent the spread of disease in the State of Mississippi, and other purposes," approved March 1, 1878.

SEC. 9. *Be it further enacted*, That it shall be the duty of every practising physician in this State to report to the Circuit Clerk of the county in which any birth occurs under his practice, the date of such birth, and the sex and color of the child, and the nationality of the parents; and if still-born he shall so state in his report; he shall likewise report to same every death that occurs under his practice, with the name of the deceased, date of death, age, color and sex, and nationality of deceased, and cause of death; said physicans shall also include in their reports all facts reported to them by mid-wives and other persons under the provisions of section ten of this Act; said reports shall be made by the tenth day of the calendar month next succeeding the date of each birth or death.

SEC. 10. *Be it further enacted*, That all the matters herein required of physicians shall be required of mid-wives or other persons officiating as such at births, and in case of the death of the child, or in case it is still-born, to report the same, with cause of death so far as the same is known, and such other facts in connection therewith as may be within the knowledge of the party so reporting. The reports provided for in this section shall be at once made to the nearest physician of the county where the birth occurred,

SEC. 11. *Be it further enacted*, That in all cases of death where a physician is not in attendance, it shall be the duty of the surviving head of the family in which such death occurred, to make such report; and that when a death shall occur in a hotel or a boarding-house, or in a private family, or on the premises of any person, where no physician was in attendance, it shall be the duty of the landlord or proprietor to make such report.

It is hoped that in some of the counties we will at once secure a pretty full registration, but it is evident that some time will be required to secure it in the entire State. The public are slow to appreciate the importance of such measures, and until they do it will be impossible to collect these statistics in a manner sufficiently complete to be of real value.

The experience, I believe, of those who have undertaken this kind of work before us, is that some time is required to obtain full returns from an extensive field where it is necessary to depend upon a large number of reporters.

The following forms are those to be used for the return of births and deaths:

REGISTRATION OF BIRTHS.

[*To be returned to the Circuit Clerk of the County in which the Birth occurs.*]

1. Month, day and year of birth.....
2. Sex.....
3. Color*.....
4. State if still-born .....
5. Full name of father.....
6. Name of mother previous to marriage.....
7. Nativity of father.....
8. Nativity of mother.....

I hereby certify that the above is a true Return of the birth and other facts above recorded.

Dated at.....
County of.....Miss.,
this....day of.....187..

.....
†Attending Physician.

Residence.....

*State whether white, black, mulatto, Indian or other races.

†Strike out these words if the Return be made by some other person, and add other explanatory words.

REGISTRATION OF DEATHS.

[*To be returned to the Circuit Clerk of the County in which the Death occurs.*]

1. Date of death....., 187....
2. Full name of deceased.....
3. Sex.....
4. Color*.....
5. Age (last birthday).....
6. Nativity.....
7. Occupation.....
8. Disease.....

I hereby certify that the above is a true return of the death and other facts above recorded.

Dated at.....
County of.....Miss.
this....day of....., 187...

.....
†Attending Physician.

Residence,.....

*State whether white, black, mulatto, Indian or other races.

†Strike out these words if the Return be made by some other person, and add other explanatory words.

AMERICAN PUBLIC HEALTH ASSOCIATION.

On November the 19th the American Public Health Association met in Richmond, Va., to receive the report of the first Commission of Experts appointed to investigate the epidemic of yellow fever, and to consider the means of prevention. This Board was invited to send delegates, and in response to that invitation Dr. Rice, then President *pro tempore*, appointed the following gentlemen to represent us: Rev. C. K. Marshall, Hon. E. Barksdale, Drs. R. G. Wharton, J. M. Taylor, P. J. McCormick, S. D. Robbins, F. W. Dancy, Geo. E. Redwood and Wirt Johnston. Of this number, Rev. C. K. Marshall, Dr. S. D. Robbins and myself attended the meeting and presented the following paper:

REPORT OF THE DELEGATION FROM THE MISSISSIPPI STATE BOARD OF HEALTH TO THE AMERICAN PUBLIC HEALTH ASSOCIATION.

The State which we have the honor to represent having been one of the chief sufferers from the recent epidemic of yellow ever, it is proper that we should say something to this meeting. The arduous duties incident to the epidemic, left no time for us to collect statistics, and we will, therefore, not attempt to enter into details, but what we have to say will be in a general way. On the 2d of August, when only a comparatively small number of cases of yellow fever were officially reported in the city of New Orleans, our towns located on the Mississippi river and on the railroads, began to establish quarantines under the direction of the State Board of Health, and a little later the quarantine of entire counties began. The first official report received at the office of the State Board of Health of the existence of a number of cases of yellow fever within the limits of the State, was from the town of Grenada, on the 12th of August, when fifty cases were reported. Some time before this our County Boards of Health had been organized, and soon after the report had been telegraphed throughout the State, almost every town and village had organized a board. Very early in the season most of our towns and villages and many entire counties were quarantined. Thus you will see our organization to do battle with the pestilence was pretty thorough. In addition to quarantines, disinfectants, carbolic acid, sulphate of iron, fresh stone lime, etc., were freely used in the greater part of the State, and an effort was made to place every exposed point in the best possible sanitary condition. When a locality became infected the following measures were resorted to: Households containing patients were quarantined, apartments after being occupied by patients were subjected to sulphurous fumigation, bedding, clothing and towels used by patients were burned, dead bodies were

buried soon after death, and carbolic acid was freely used about infected localities.

The abundant experience which we have just had leads us to believe, that while disinfectants, cleanliness, good drainage, etc., have their merits in the prevention of some other diseases, they are utterly powerless to prevent yellow fever. Localities that were in the best possible sanitary condition were visited by the disease, it spread rapidly and was as fatal as in other localities. Seven weeks before the appearance of a single case of the disease, the city of Jackson was placed in the best sanitary condition, and during all of this time the streets were sprinkled daily with a three per cent. solution of carbolic acid until the odor of the acid pervaded the entire town, but when the disease was introduced an epidemic was the result. The experience of other places was similar. When a place once became infected the measures resorted to proved utterly futile in arresting its progress, the disease would spread in spite of them.

Much has been written on the subject of inland quarantine and their impracticability.

Our experience has taught us that an absolute inland quarantine is not impossible, but they are extremely difficult to accomplish, are very inconvenient, and interfere greatly with travel and internal commerce. While many of our towns became infected, still most of them entirely escaped through the efficiency of quarantines, and instances are not wanting where entire counties occupying exposed positions, thus escaped. Notably among them is the county of Jefferson on the Mississippi river, where seventy miles of territory was guarded by mounted police. But while we maintain that inland quarantines can be made efficient, and should be established and made rigid when necessary, still we are anxious to avoid their inconveniences.

Our disastrous experience of this year has demonstrated how difficult, how well nigh impossible to arrest the development and spread of yellow fever when it has once reached our shores. In addition to our own experience we have the voluntary confession of numerous State and municipal boards of health that their efforts to eradicate the disease by the use of disinfectants, have proven wholly ineffectual, if not positively injurious. Naturally, then, we are led to the consideration of other means by which we may escape future visitations of this death-dealing plague. Satisfied as we are by the observance of proofs that we deem indisputable, that yellow fever does not originate *de novo* in any one of the United States, we are naturally led to consider the means by which the introduction into our country may be prevented. This question is one that is of the very greatest importance to those whose homes are in the Mississippi Valley, and scarcely less important is it to the whole country.

The suffering and sorrow and the pecuniary losses that have this year fallen to our portion, and which have so touched and melted the hearts of our whole people, cannot fail to make the prevention of its repetition a subject of profound interest to the whole country.

The utter failure of such quarantine regulations as have heretofore existed at our Gulf and South Atlantic ports, has sufficiently demonstrated their inadequacy to afford to us that protection which we ask for the safety of our citizens.

While positive non-intercourse with the West India Islands, and the Spanish and South American States may not be possible for us to obtain, by reason of commercial treaties that may exist between their respective governments and our own, we do ask of our general government that such restrictions be placed upon that intercourse as will prevent the possibility of future visitations of yellow fever.

Inasmuch as the States whose ports are thus exposed, have proven themselves powerless to successfully quarantine those ports, and by such failure have inflicted great loss and injury upon the whole nation, we do most earnestly recommend that Congress take such action as will afford to the States means of making the quarantine of those ports as rigid and effectual as it is possible to be done.

In presenting our report we have necessarily been very brief, and have avoided all reference to the fearful scenes through which we have passed, and endeavored to present such a statement as may conduce to the accomplishment of the great objects had in view by this Association.

And in conclusion we beg leave to record the profound sense of our indebtness to the great hearted and sympathizing people of the States outside of the plague-stricken regions for the timely and appropriate relief they have lavished upon us in the gloomy and fearful period of our unexampled calamity. With us the light went out and the darkness came on with alarming rapidity. But we soon discovered the heavens overarched with myriads of cheering faces, and gentle voices inspired us with fresh courage, while countless ministering hands scattered the life-giving tokens of tender and loving solicitude upon us. Thus our trouble and calamity revealed our real friends,

> "As darkness shows us worlds of light,
> We never saw by day."

But never until the searching light of the last great day shall flash all secrets into view, can our generous benefactors comprehend the vast sum of good they have achieved, and the depths of sorrow and distress from which they have snatched

innumerable sufferers. May heaven reward their pious deeds, and preserve them from kindred calamities.

Respectfully submitted,

WIRT JOHNSTON,
S. D. ROBBINS,
C. K. MARSHALL,

Delegates from the Mississippi State Board of Health.

RICHMOND, Nov. 21, 1878.

EXPENSES OF THE BOARD DURING THE YEAR.

Expenses incurred by the members in attending meetings:

Meeting April 3rd, 4th and 5th at Jackson—

R. G. Wharton	$ 25 00
D. L. Phares	34 50
J. M. Taylor	35 00
P. F. Whitehead	5 00
C. A. Rice	14 80
S. V. D. Hill	30 00
Total	$144 30

August 14th, C. A Rice, in coming to attend a meeting at Jackson at which no quorum was present..... $ 5 70

Meeting December 10th and 11th at Jackson—

John Wright	$ 25 00
C. A. Rice	8 55
J. M. Taylor	35 00
D. L. Phares	23 00
S. V. D. Hill	28 50
Total	$120 05

STATIONERY AND PRINTING FROM PUBLIC PRINTERS.

Jan. 7.	1000 circulars relating to Trchanæ Spiralis	$ 6 00
Jan. 7.	200 No. 10 envelopes, printed	3 00
Mar. 27.	200 copies Act relating to Boards of Health	9 00
Mar. 27.	80 letter circulars to Boards of Supervisors relating to the organization of County Boards of Health	3 00
Mar. 27.	80 letter circulars to County Boards of Health	3 00
Mar. 27.	500 circulars relating to small-pox	5 00
May 11.	200 copies Rules for local Boards	15 00
May 11.	75 postal cards relating to same	1 50
June 1.	500 No. 6 envelopes, printed	3 50

July 28.	27,000 Returns of Births	74 25
July 28.	27,000 Returns of Deaths	74 25
Aug. 1.	78 record books for the Registration of Marriages, Births and Deaths	78 00
Aug. 1.	1000 blanks for Transcript of Marriages	12 50
Aug. 1.	1000 blanks for Transcript of Births	12 50
Aug. 1.	1000 blanks for Transcript of Deaths	12 50
Aug. 6.	300 circular letter to mayors of towns	4 00
Aug. 6.	300 circulars on disinfectants	4 00
Aug.26.	47 circulars on quarantine to supervisors	2 50
Sep. 15.	1000 No. 6 envelopes, printed	6 00
Sep. 15.	One-half ream letter heads	4 00
Oct. 21.	6000 circulars to towns where yellow fever prevailed	18 00
Oct. 21.	40 labels for mailing circulars	1 00
Dec. 16.	90 letter circulars to Circuit Clerks relating to the Registration	2 75
Dec. 19.	90 receipts for Registration documents	2 50
Dec. 21.	1000 Return of Births	4 00
Dec. 21.	1000 Return of Deaths	4 00
Dec. 21.	75 postal wrappers	1 00
Dec. 21.	2000 circulars to the medical profession on the subject of the Registration	7 00
	Total	*$373 75

We also received a memorandum book, a book in which to to record local Boards, a letter copying book and a bottle of mucilage.

*The Attorney-Geneneral gave as his opinion that this amount could be used if necessary, provided the Public Printers would ask payment for only $250 this year, and would carry the balance to the next year's account.

POSTAGE, EXPRESSAGE AND TELEGRAMS.

		Dr.			Cr.
Jan. 10	To cash from Auditor	$ 2 35		By postage	$ 1 00
Mar. 26	To amount from Auditor	10 00	Mar. 27	By postage	1 85
*Aug. 12	To amount from Auditor	25 00	Apr. 15	By postage	30
*Aug. 16	To amount from Auditor	20 00	May 17	By postage	2 00
†Sept. 16	To amount from Auditor	25 00	May 29	By postage	1 65
†Sept. 16	To amount from Auditor	10 00	Aug. 7	By postage	5 00
Dec. 14	To amount from Auditor	18 44	Aug. 10	By telegrams	85
Dec. 20	To amount from Auditor	19 50	Aug. 12	By telegrams	40
Dec. 20	To amount from Auditor	30 50	Aug. 15	By telegrams	25 10
			Sept 1	By telegrams	21 50
			Sept. 12	By postage	8 00
			Nov. 16	By telegrams	25 00
			Dec. 14	By telegrams	18 44
			Dec. 20	By postage	10 00
			Dec. 20	By expressage	30 50
				By cash on hand	9 20
	Total	$160 79		Total	$160 79

*These amounts were furnished by the Auditor during the excitement incident to the epidemic, but his books show that the warrant was not issued until February 4th, 1879.

†These amounts were furnished under the same circumstances, and the Auditor's books show that the warrants were not issued until November 30th, 1878.

SMALL-POX.

SMALL-POX IN MARION COUNTY IN THE SPRING OF 1878.

By T. B. FORD, M. D., President Marion County Board of Health.

The immediate section of country where the disease prevailed is quite thinly settled, families generally living from one to two miles apart. An Irish peddler, who had been exposed to small-pox in Brookhaven, stopped quite ill at the house of a Mr. Bracey for the night. Mr. B's family consisted of eleven persons, none of whom had ever been vaccinated. It is proper to state here that from careful enquiry I think not more than one-tenth of the people in this neighborhood had been vaccinated previous to this time, and of the county at large not more than one-fifth. The peddler died of confluent small-pox at Mr. Bracey's. An irregular practitioner of medicine, (and by that term I mean one who had never received a diploma) was first called in to see him, and supposed it to be a case of measles. He paid dearly for his mistake; never having been vaccinated he took small-pox and died. The unfortunate mistake of this man led to serious consequences; persons who had previously had measles but who in several instances had never been vaccinated, visited the sick man and contracted small-pox. Thus the disease spread. In all there were thirty-five cases; six of this number being cases of varioloid, *i. e.*, persons who had been vaccinated previous to the eruption and had modified small-pox as a result of vaccination. Excluding cases of varioloid, eleven adults and eighteen under the age of twenty-one, had small-pox in an unmodified form. Eight adults and two under twenty-one died, the mortality in adults being nearly seventy-three per cent., in persons under twenty-one a fraction over eleven per cent. The mortality in all unprotected by vaccination was nearly thirty-eight per cent. Why there was such a difference in the death rate of adults and children I cannot say. In all fatal cases I saw, and in all others so far as I could learn, death was due simply to the violence of the disease, the eruption being confluent in all fatal cases. I have omitted to mention one death which does not enter into this calculation of the mortality. Mr. and Mrs. Bracey both died. Mrs. Bracey was eight months pregnant and miscarried the first day of the primary fever; *i. e.*, about three days before the eruption came out on her, yet the child

which only lived a few hours, had the small-pox eruption well developed, the eruption on the child being three days in advance of that on the mother. This singular fact has often been noticed by other physicians. This epidemic presents nothing new to the medical profession, the mortality being about an average.

Those interested in sanitary medicine would perhaps like to know what steps were taken to arrest the spread of small-pox and the result of the same. Dr. Applewhite, of Tylertown, who saw most of these patients before I did, vaccinated thirteen who had been exposed from one to three days, (I could not learn the exact date of exposure in all cases.) Of this number the vaccine pustule was in advance of the eruption in four, all of whom had small-pox in its mildest form and recovered. So much for vaccination after exposure. Of the other two who had varioloid one had been vaccinated fifteen and the other twenty years previously. In addition to vaccination each and every house where small-pox prevailed was isolated; no one was allowed to enter or leave without permission from a physician or the chief nurse who visited all the families every day or two. Without going into details I will say, the epidemic was arrested by stopping all intercourse with the outside world. It was a sad and mournful spectacle to see these sick and dying families cut off from communication with all friends and relatives, still it was best it should be so.

It is a well known fact that clothing that has been about the person of a patient with small-pox, or even in the house where the disease has prevailed will retain, when placed in trunks or drawers the infection a long time. That the danger of this disease breaking out again might be avoided, I had each and every house disinfected in the manner suggested by the State Board of Health as per circular received at that time *i. e.* the inside of each house and all furniture and bedding so far as could be without destroying the same, subjected to the action of boiling water; all furniture and other articles that would be seriously injured by hot water were placed in the open air for several days; everything was then replaced and each house as tightly closed as possible; sulphur in large quantities was then burned, the house remaining closed for several hours.

This done the nurses were required to wash carefully, put on clothes that were fresh and clean, and were then discharged.

And here I desire to say a word in regard to nurses. It was very difficult to get them as soon as required, and no fund to draw upon for their pay; and but for the kind assistance we received from Jackson, Summit, McComb City, Magnolia, Tyler Town, China Grove and Columbia, I really do not know what we should have done. The easy way in which this epidemic was brought to a close would not hold good in cities or towns. There is but one way in fact to avoid epidemics of

small-pox, and that is thorough vaccination, not only for cities and towns, but for the country as well. I think the suggestion of the late Dr. Hughes of Grenada, to establish in Jackson a vaccine bureau, a good and practical idea.

It is not sufficient for the Legislature to make a law saying County Boards of Health may make vaccination compulsory in their counties, when they do the work for nothing and are compelled to buy vaccine matter themselves. Such a law will never be enforced. There is probably no infectious disease that has claimed so many victims as small-pox; yet we have in vaccination an almost certain and harmless preventive. It is a question for our State authorities to decide whether the poorest of her citizens shall have this mantle of protection thrown over them. Slowly and surely we have learned this much in regard to infectious diseases. That the infectious properties of some are either destroyed by cold or held in a dormant state; while in others, nothing will in fact so certainly destroy the poison as heat. In some few diseases it is necessary to carry the heat beyond the boiling point of water.

Slowly the medical mind is reaching the conclusion that all infectious diseases are due to a living poison; in each peculiar, and with the power of multiplying itself in the human system.

In conclusion, I will say, this much we have learned in regard to small-pox:

First—That of all infectious diseases, none, to use a common expression, is so catching; very few in which the mortality is so unfortunately high.

Second—We have in vaccination, skillfully performed, the virus being pure and active, the power of preventing this disease entirely, or so modifying the same as to divest it of all danger, even though vaccination be practiced one or two days after exposure.

Third—That with scarcely any exceptions, when the susceptibility to vaccine virus is exhausted, the susceptibility to small-pox is also, but that the susceptibility to each does return in certain cases after a lapse of years, (the number not being uniform) is also true, but revaccination at proper intervals (say once in five years) will almost invariably protect against small-pox, however great the exposure may be.

Fourth—One thorough vaccination is generally sufficient for a life-time.

YELLOW FEVER EPIDEMIC OF 1878.

The Epidemic in Grenada, 1878.

By H. J. RAY, M. D., President County Board of Health.

The town of Grenada is located on an elevated plateau on the south side of the Yalobusha river, about two hundred feet above the level of the sea. On the south the country is open and level for five or six miles, with only small patches of timber here and there to break the monotony. On the west the country is hilly, and well timbered. On the east flows the Bogue Creek, about one-half mile from the public square. The Yalobusha river flows about one quarter of a mile from the public square. On the north side of these streams the country is low, swampy and densely wooded for four or five miles.

Thus stands Grenada with its surroundings.

I dare say no town in the State has better natural drainage, its streets sloping in every direction. Every rain washes its gutters clean. The famous sewer, about which so much has been said, and from which a great many people believe to this day, that the foul pestilence had its birth, is not a sewer, but a large culvert which runs diagonally across the town, of which it is the principal drain. It is about three-quarters of a mile in length. The first and last quarters, and part of the middle, are exposed to the air and sun all the time. About one hundred and fifty yards of the middle quarter are floored, walled up and covered over with timber. The middle and last quarter, beginning where it runs diagonally across main street, through the east ward and empties into the Yalobusha river, is really the grand receptacle of the waters from neighboring gutters and streets in every direction. The first quarter being somewhat smaller empties into it. This culvert is about four feet wide and three feet deep. In wet weather the water passes rapidly away, never leaving stagnant water behind. In dry weather it dries up completely, even that portion under cover when there is no unusual amount of rain. It is impossible that any part of this drain could become very filthy, except that part which is under cover, and even then I do not believe it can become so loaded with filth as to constitute an important factor in the production of yellow fever germ. It might possibly have played an important part in the production of bil-

lious remittent fevers. About the latter part of June the timbers of that portion under cover were discovered to be in a decayed state and were falling in, which necessitated repairing immediately. In making the repairs about fifteen or twenty feet were opened up at the time, and the decayed timber and mud or filth if you please, which had accumulated at the bottom was dug out and thrown upon the street, to be exposed to the sun for a week or more at the time. Something like sixty yards were thus excavated and renovated. Whatever noxious influence the emanations from this filth may have had in other ways, I do not believe it had anything to do with generating the yellow fever poison, which one month later, blasted high hopes and desolated so many happy firesides, for this work was done in June and the fever did not make its appearance until the latter part of July.

I have thus dwelt minutely on this drain, because the popular belief abroad is that the fever had its origin from it. Visitors would be astonished at its almost insignificance, and would never be discovered unless pointed out to them.

About the same time this drain was undergoing repairs, the old flooring in a saloon on Depot street was being taken up and new put down, from under which about twenty-five cart loads of dirt were dug out and thrown into the street in front, which had not seen the light of day for quite a number of years. As well as I can remember this dirt lay exposed to the sun for two or three days, and then was dumped on the streets in different parts of the town. The health of the community was good until a few days before the fever was announced. The general sanitary condition of the town was bad indeed. The premises in the rear of business houses were quite filthy, and rarely ever cleaned up. Privies were not properly attended to, generally left to the common town scavengers to do both cleaning and disinfecting. Privy vaults were discovered to have been used for years without being cleaned. Many back yards were discovered to be in a filthy condition. There were hog wallows in different parts of the town, from which emanated offensive odors. A surviving clerk in the variety store of Bryant & Davis told me that at times such offensive odors would rush in at the back door that he would be unable to remain in the back part of the house.

I have endeavored to give an unvarnished statement of facts as to the sanitary condition of the town.

Inasmuch as all this filth, such as raking up rotten debris, tearing down privies, cleaning out vaults, opening cellars, etc., was stirred up after the epidemic commenced, I believe the mortality of the disease was greatly influenced by it, though do not believe it had any part in generating the yellow fever germ. Yellow fever never made its appearance here before as an epidemic. In 1873, during the epidemic in Memphis, there

were several cases among the refugees to this place, and it was strictly confined to those cases. Had no tendency to spread whatever. This lulled our people into a state of apathy; and they hugged the delusive idea that the death-dealing poison never would spread here. Hence the delay in establishing quarantine and the very lax manner in which it was carried out. Only partial quarantine was established. Trains were allowed to stop, but nobody being permitted to remain over. All suspicious characters were forbidden inside the corporate limits. No goods of any kind except flour, sugar, coffee and molasses were allowed to be brought in. These rules were not strictly enforced, and simply amounted to no quarantine. Notwithstanding this, however, the terrible malady which steathily insinuated itself into an unsuspecting community had been scattering the seeds of poison for two weeks or more before quarantine was talked of, which later brought forth a harvest of death and suffering.

The population before the epidemic was about twenty-five hundred, of whom about thirteen hundred were whites and twelve hundred blacks. After the panic, about three hundred and fifty whites and one thousand blacks remained to face the horrors of the pestilence.

The history of the first cases are as follows:

The first authentic case was that of Mrs. Fields, formerly of Okolona, who lived on the corner of First and Depot streets, about two hundred yards from the depot. She was taken suddenly ill with a chill on the evening of the 24th of July, while getting ready to attend a concert at Mozart Hall. A few hours later, on the same night, Miss Chamberlain was attacked suddenly with a chill, and had to be carried home. She attended rehearsal several times at Mrs. Field's house. Miss Chamberlain recovered about two weeks later and Mrs. Fields died on the 31st. She had black vomit, suppression of urine, skin very yellow, and the body after death very much discolored, swelled rapidly and very offensive. She died on Monday, was put in a metalic case on Tuesday, and buried from the Presbyterian church on Wednesday. Mrs. Fields' residence is about half way between the church and cemetery. The corpse was carried through town to the church, thence back by the same route to the cemetery across the railroad. The church was crowded and the body became so offensive as to elicit general remark, many leaving the house on that account. After services were over a leak was found in the bottom of the case. Whether any cases subsequently can be ascribed to this fact directly, I cannot say positively. Drs. Hall and Hughes were her attending physicians, both of whom died during the epidemic. They called her disease congestive fever, but afterwards pronounced it yellow fever.

The second case was that of Robt. Young, a clerk in the

variety store of Bryant & Davis, on Depot street. The firm kept dry goods, groceries, etc. Here he remained through the day and late at night, only going to his meals. He was proprietor of a saloon on Main street, which he visited every evening. He was attacked on the 5th and died the 9th of August. He had intense pain in the head and back, black vomit, suppression of urine and skin very yellow. His body very much discolored after death. The attending physician diagnosed the disease malignant billious fever, but subsequently changed it to yellow fever.

Alice Johnson, a mulatto woman, who lived at the jail, which stands some distance from either point of infection, was attacked about the same time with the same symptoms and died on the night of the 9th.

No direct exposure can be traced to these cases. From these points of infection it spread like wild-fire over the town.

A great deal of interest hangs around the case of Mrs. Fields and family as being the source of intense infection and rapid spread into neighboring families. It is to be much regretted that no positive evidence could be obtained as to how she was exposed. About seven or eight days before she was taken ill she went to the depot with her daughter Mattie Fields, early in the morning before breakfast to see her off on the train for Okolona. As the train stops twenty minutes for breakfast it is highly probable that they boarded the train instead of waiting in the hotel, as is customary for citizens going off to do. All evidence denies the idea abroad that Mrs. Fields received a dress pattern from New Orleans, but it seems that she did get one from Bryant & Davis' variety store; where it came from originally I was unable to find out.

I will now give a brief history of Mrs. Fields' family who attended her funeral, which numbered ten, as follows, to-wit: Gray Fields came from Grand Junction to attend his mother's funeral, and after remaining two or three days returned home. His subsequent history shows that he escaped.

Thos. Fields was with his mother during her illness, and after her death remained in town, until the epidemic was declared, when he left for the country, where he was taken sick, brought back and died on the 13th of August.

Harry Fields was with his mother during her illness; was attacked on the 7th and died on the 11th.

Waddell Fields was with his mother during her illness, went into the country after epidemic was declared, and escaped the fever.

Mrs. Shephard, daughter of Mrs. Fields, was with her mother during her illness; went into the country after epidemic was announced; was taken sick, brought back and recovered.

Lemuel Shephard, grandson of Mrs. Fields, went into the country after the epidemic was announced, and escaped.

Katie Shephard, granddaughter of Mrs. Fields, went to the country but contracted the fever, was brought back and died about the 15th of September.

Mattie Fields came from Okolona to attend her mother's funeral; on her way back home was taken sick and died near Okolona.

Mrs. Abernathy, daughter of Mrs. Fields, came from Okolona to attend her mother's funeral, after which, she returned home and escaped.

To sum up: 7 cases; 5 deaths; 2 recoveries and three escapes.

Those families in the immediate neighborhood were attacked in rapid succession. On the southeast corner of First and Depot streets stands the Walthall House. Here were ten cases; 6 deaths, 4 recoveries, and no one escaping.

At the next house lived Mr. Shankle. Here were thirteen cases; 6 deaths, 7 recoveries, no one escaping. At the next house lived Mrs. Davidson, her daughter and mother. Her family was increased to seven persons by relatives coming in from the country to nurse them. Not a single soul was left in this house to tell the sad story. On the north side of Mrs. Fields' residence lived J. M. Bishop. Out of five cases here, four deaths, one recovery and no one escaping. At the next house lived U. Carl. There were eight cases here; four deaths, four recoveries and no one escaping. On the opposite side of the street the fatality was about the same. All these were attacked, in rapid succession, between the 5th and 15th of August, death taking place almost invariably in four or five days after the attack; in some instances, earlier.

Members of the different families just mentioned, nursed Mrs. Fields during her illness, assisted in shrouding and lifting her into the coffin.

Robert Young lived one square southwest from Mrs. Fields. The infection was intense from this source also. His family consisted of three persons, all of whom died. The neighboring families were attacked in from four to six days after exposure.

The fever had now begun to assume frightful proportions, and on the 11th of August, the local physicians were forced to declare that the great Southern epidemic was in our midst, whence ensued one of the greatest panics that Grenada ever witnessed. Her physicians were so completely dazed that they could not realize what they had to deal with. The people, panic-stricken, fled into the adjacent country and to distant cities, bearing with them the seeds of pestilence to bring forth a harvest of death and suffering, as at Holly Springs and other places. Fright exerted a wonderful influence on the mortality of the disease, more so, in my opinion, than anything else.

Something like four or five hundred whites and blacks,

chiefly blacks, went into camps in the hills a few miles from town, the blacks going out very early in the epidemic, but returned before it was over. The blacks were less susceptible to the fever than the whites. As a rule they took the disease later in the season. The western and southwestern part of the town is wholly inhabited by them, which was last to be invaded. The disease was much milder in the black than the mulatto, and milder in the mulatto than the white.

As far as my observation extended, all ages and both sexes were attacked, making no distinction in them. The fever started with such a malignancy that it triumphed over the best medical skill, and in its onward march swallowed up all other ills. Its march of death was seemingly checked about the latter part of September, but it was for the want of material. It was reserved for the hoary frosts of November to check its progress. The last case occured on the 2d of December.

Total number of cases, about 1050; total number of deaths, about 350; white deaths, 260; black deaths, 90. Only four persons escaped who remained through the epidemic.

I do not believe in the theory that yellow fever originates in filth Mrs. Fields' premises were in a good sanitary condition, and everything presented an air of cleanliness. A good many families lived nearer to the famous drain and the filthy part of the town than Mrs. Fields. The fever was confined principally to the east ward for nearly two weeks before it crossed over Main street into the west ward, and then only by friends and relatives unsuspectingly visiting the sick in the infected districts.

Sanitary measures of the nature of a general cleaning up, and a free use of disinfectants were adopted only a few days before the epidemic. The disinfectants used were carbolic acid, lime and copperas. They proved to be almost wholly ineffectual. As to measures adopted after the epidemic was announced, I am almost ashamed to relate, but the truth must come, and the only way of escape from such a fatal blunder is to hide us behind the screen of panic. So active measures were begun, such as raking up old rubbish, tearing down privies, cleaning out vaults, opening cellars, which the light of day scarcely ever penetrated, and cutting down weeds under the hottest sun this country has ever experienced. The streets were washed with copperas water; the town was strewn with lime from one end to the other; carbolic acid was freely used, and tar smokes were kept up night and day, almost to suffocation, to the great annoyance and discomfort of both well and sick. All this availed nothing, but seemingly served as pabulum for the all-conquering disease. Prophylactics, as a rule, were ineffective. In some instances where the system was cleansed by a course of mercury and free use of quinine after-

wards, the disease was rendered somewhat milder. Various prophylactics were used, quinine and the *liver pad* being the most popular. The pad, however, went most ingloriously down as a preventive of yellow fever.

The wind blew principally from the northwest, but occasionally came from the east and southeast. The atmosphere had a yellow saffron appearance, which traveled from the eastward gradually over the town. It was quite prominent, as it was noted by the physicians and others. The thermometer, from July 25th to October 1st, averaged from 75° to 80° in the morning, and from 96° to 98° in the evening. The temperature was taken in the morning between sunrise and six o'clock, A. M., in the evening between one o'clock, P. M., and three o'clock, P. M. This was kindly furnished by my friend Dr. W. M. McSwine. The heat was so intense as to exert a withering influence on both animals and plants. Dr. McSwine, who lives in the country, says the cotton plant was actually withered and not wilted to be restored or revivified by showers. The weather was fair and dry most of the time, only two or three showers during the epidemic. It was quite pleasant under a shade, and the nights rather cool. With the end of the epidemic, which made Grenada a historical spot, closed one of the darkest and saddest chapters in its history.

I will now endeavor to give a brief history of the fever in the neighborhoods of Grenada. The first case was that of Samuel Flippin, who lived four or five miles south. In the beginning of the epidemic his relatives in town were attacked with the fever, and he came in and nursed them during the day, going home at night. He was attacked about the 1st of September and died about the 6th. His wife and two children died a week or two later. From this case, it spread into neighboring families. Neighbors helped nurse him, shrouded and buried him. A good many persons who were exposed escaped. The second authentic case occurred in the neighborhood west of the town, in the person of Thos. Koon. As to how he was exposed it was impossible to find out. It spread, however, throughout the neighborhood. While the exposure cannot be traced directly, it is very evident that they were exposed, when it is known that the country people come to town, remained a while and then went home; and that the negroes made night visits for the purpose of plundering. One thief was caught, by the goods being picked up behind him, all the way to his house. He subsequently died of yellow fever.

I do not believe the winds had anything to do with the spread of the fever into these neighborhoods. They were exposed in some way or other that they were not aware of.

I believe yellow fever is an infectious disease, and not contagious.

The Epidemic at Canton, 1878.

By A. T. SEMMES, M. D., President County Board of Health.

Prompted by a sense of duty I shall endeavor to comply with your request of writing out a short history of the yellow fever epidemic of Canton in 1878.

Much discouraged by the vast amount of discordant views and theories advanced by medical writers of so much greater ability and means of attaining the truth than myself, I must of course fear that my scanty store of observations will be unsatisfactory. This must necessarily be the ease, as my memoranda had to be made without order and without the least intention or expectation of placing them upon record. In my anxious labors to minister to the wants and to save the lives of my friends and neighbors, I had not that cool collection of mind, nor the leisure time sufficient to take such notes as are almost necessary to render acceptable a treatise such as you require of me. Accept, then, my brief sketch in the spirit with which I offer it, of a candid effort to simply state facts as nearly correctly as I am able.

On the Chicago, St. Louis and New Orleans railroad, 206 miles north of New Orleans, is situated the busy little town of Canton, counting with its suburbs about 3500 inhabitants. Elevated not more than two hundred and fifty feet above the sea level, and built upon a flat table land ridge between the Pearl and Big Black rivers in central Mississippi, it suffers every summer and autumn with the various malarial diseases incident to the lower Mississippi valley, On the south and west of Canton, distant from the centre of the town about one mile and a hall, a muddy bayou struggles sluggishly through its many windings, overflowing with every heavy rain fall; and drying up into stagnant pools during the summer droughts. Through the northern portion of the town a smaller ravine runs, spreading out over its flat vale with each shower; and, upon receading, leaving many small lagoons to slowly evaporate by the summer heat.

Only once before, in the year 1855, was Canton visited with an epidemic of yellow fever; though several times, during this interval of twenty-three years, persons sick with the fever have taken refuge here from infected places, and have died here without spreading the disease.

As early as June of 1878, the unusual heat had begun to produce, much sooner than common, serious spells of remittant fever; and, as the month of July came filling each successive day with a heavier roll call of fever for all the physicions in the surrounding country, suspicions of the yellow scourge began to excite the fears of all who had any recollections of 1855.

Noticing closely, day by day, the features of our billious

fever patients, showing a constantly increasing shading off into many symptoms of yellow fever cases, I expressed my honest belief that, without some quick and marked improvement in our climatic conditions, we should certainly drift into a visitation of the dreaded scourge. The pointings of the thermometer and barometer, the excessive luxuriance of vegetation, the oppressive odors from the bayous, all brought back to the minds of the older citizens the similar circumstances of 1855.

Still, as many others besides myself were fully satisfied of the perfect inefficiency of such quarantine regulations as we could enforce, no measures for quarantining were instituted till the first or 2d day of August, when already the deadly enemy was among us.

On the 20th of July I attended a young man who had no communication with any person or goods of any sort by which he could be infected; still his case had every feature and symptom of the cases of yellow fever which I had nursed in the epidemics of 1853 in New Orleans and Louisiana, and in 1855 in Canton.

With regard to this case, though I shall ever feel satisfied myself of its real character, I wish to state that he left Canton on the 20th of August and remained in the country about eighty days. In the first week of November he returned to town, to a house in which there had been twelve severe cases of yellow fever, and there aided, during fourteen days and nights, in nursing his brother and mother, two of the most violent cases we had in the entire epidemic. At the end of the fourteen days he was attacked with the fever, being quite sick for two or three days, but not nearly so pointed in his symptoms, nor nearly so weakened as in his original attack.

I mention these facts so minutely for the reason that many may contend that his having the fever in November should prove that he did not have it in July. I have known some such second attacks, and all writers also mention similar cases.

In the last week of July a telegraph operator, who had but recently left New Orleans, had the yellow fever in a private residence in the extreme north-west portion of Canton, infecting no one, as at least seven or eight weeks elapsed before the disease showed itself in this part of the city.

On the 2d day of August, a railroad stationary engineer, who occasionally passed an hour or two in the office of the above mentioned operator, had the fever in a railroad boarding house (remote from the above private residence half a mile) but no one seemed infected in this house, as at least six or seven weeks passed before other cases developed in the locality.

On the 1st or 2d of August there came to Canton from New Orleans, a German school teacher, sick with the yellow fever, and was nursed by a family next neighbors to the above men-

tioned boarding house, but none of the family were infected, though they remained twenty days before they fled.

On the 1st or 2d of August a family from New Orleans reached Canton, being received into the house of quite a large family of relatives. In three or four days after their arrival two children of this New Orleans family were very slightly sick and excited the suspicions of one of our physicians who visited them. In the next four or five days following, four more of this combined New Orleans and Canton family were very slightly sick but were treated without a physician, by the host, with calomel and quinine and were up able to attend to their duties, with undisturbed appetites, in the course of thirty-six hours. The remaining four or five members of this family were not sick at all.

On the 8th or 9th of August, in the yard of what is known in the Canton history of the epidemic of 1878 as the Henry House, an old negro woman was taken very ill with what afterward proved to be of the same nature as all of the succeeding malignant fever cases of this portion of the town. This Henry house is on the same street with the residence of the above mentioned combined New Orleans and Canton family, a space of two or three hundred feet intervening between them. The old negress had not been out of her own premises, nor held any communication with the neighbors. On the 10th or 11th of August a little white child in this Henry House was taken very ill, and in one or two days her father, Dr. McKie, was prostrated. Then, in rapid succession, one after another of this household sickened.

In the rear of this Henry House had been festering all the summer a very filthy lagoon, filling the neighborhood every evening with a horrid stench, so much so as to render it impossible to raise the windows of the dwellings looking toward it. From about the 14th or 15th of August all the families of this portion of Canton, to the windward of this lagoon, were, in quick succession, stricken down with the yellow plague; while the families in the opposite direction from this pool were more slowly and much more mildly affected.

Starting with the above mentioned old negress, we find every case to the south and east of this Henry House of the the most malignant type of fever, almost all ending in death. To the west of it, starting at the house of the combined New Orleans and Canton family, we find all the cases so mild as to render it impossible to give, in the majority of cases, a positive diagnosis of yellow fever.

I have been thus explicit in stating facts and points in regard to this Henry House, as some physicians, who are certainly as competent as myself to judge of facts, but who were not here during the epidemic, and who were not here after its subsidence, nearly long enough to work out all the

facts and previous cases, have positively decided that our epidemic of 1878, was due entirely to the importation from New Orleans of the fever by the New Orleans family, whom I have mentioned above as refugees in the residence adjoining this Henry House on the 1st or 2nd of August.

In opposition to this opinion I shall now return to the first week of August. On the 2nd day of August and on the 4th and 5th up to the 7th of August, I treated a German family in a part of the town remote from this Henry House. One after the other of its members becoming very sick with what I regarded at first as very refractory malarial fever, till the fourth case (a young man, Wohner,) gave me satisfactory evidences of yellow fever. After his case the remaining members of the family, in the course of twelve or fourteen days, though they removed from the town, had yellow fever mildly. There was no means of infection by which this family could have derived its poison from importation.

Unaided by any microscopic observations of the blood or the secretions of my patients, and overworked, both day and night to such an extent as to prevent me making regular periodic records upon the pulse and temperature, I hesitate somewhat to give a positive diagnosis of a good many cases, which I could trace to no imported origin. However, in truth, I shall state that if hundreds of other cases were yellow fever, as so pronounced by experts, then undoubtedly these cases of mine were yellow fever of local origin. If not so, all the past history of yellow fever is rendered more than doubtful. If nothing short of inspection by post-mortem examinations and demonstrations with the microscope afford the only infallible means of diagnosing pernicious malarial fever from yellow fever, then the overtasked practitioner of medicine, in a sweeping, devouring plague as we had here in 1878, is not competent to decide those disputed points of the nature and features of the yellow fever which for fifty years have puzzled the minds of hundreds of able experimentists.

Guided by the teachings of a Stone, a Dowler, a Cartwright and a score of New Orleans' ablest physicians, I had for twenty-five years considered yellow fever as needing no importation to give it a starting point. Neither could I believe from my teaching and my experience in the years 1853 and 1855, that contagiousness was one of its properties. The facts that have presented themselves to me in the epidemic of 1878 at Canton, as well as some cases I have treated here during other years, notably, 1871, force me to express my belief that yellow fever is indigenous to all the lower Mississippi valley whenever we have the climatic conditions of 1878.

With regard to contagion, our last epidemic has completely confounded my former opinions. The disease here was unmistakably contagious, and from the accounts I have read of

other afflicted places, contagion seemed to be one of the most prominent features. In fact, so plainly shown, in many instances, was this sure and rapid communication of the disease by any one from the infected town visiting, even for a few hours, a family in the country, that we must admit the theory of contagion, or that many cases in isolated farm houses, throughout the State, were indigenous.

In the epidemic of 1855 this contagious feature was certainly wanting, as proved by the fact of scores of sick cases being removed from the town out to crowded residences in the country and there dying with black vomit, without, in a single instance communicating the disease. One other marked difference in the epidemic of 1855 and 1878 was the apparent malarial type of the fever last year.

I am aware that some able observers deny the possibility of the amalgamation of yellow fever with malarial fever, but until future developments of post mortem examinations and microscopic investigations prove the opinion totally untenable, I shall be compelled to adhere to the idea that the pernicious malarial fever, or hemorrhagic malarial fever, and hæmaturic fever, are really and truly a native form or type of yellow fever.

One fact I can certainly state with regard to our Canton epidemic of 1878, namely: that the free use of calomel, podophyllin and quinine in every single case which came under my notice, produced a decided amelioration, in eighteen hours, of all the symptoms, with an undoubted remission, in more than a majority of those cases even that proved themselves to be of the yellow fever nature by the presence of albuminous urine; by distinct black vomit and by the odor and jaundiced hue. Also must I state that the above treatment gave to the physicians, who adopted it, the satisfaction of footing up an honorable and laudable balance sheet of cures and deaths; while those who did not use this medication were very unsuccessful in the management of the disease.

This brings me to the subject of prophylactics, upon which I can say but little, as the idea of warding off an attack by previous medication was generally discountenanced.

Two individuals under my constant notice labored day and night in the worst infected houses, and over the beds of aggravated cases, for six or seven weeks before taking the fever and even then very mildly. These two persons, each, took internally, every day, eighteen or twenty grains of quinine. One family that made a daily use of quinine dissolved in whisky, surrounded by grave cases, passed through the entire epidemic with but two very mild cases.

Neither age nor sex, in white or black, seemed to make a different degree of susceptibility to the disease, but those of any age or color, who had been subjects of remittent fever

were more quickly infected, though not more violently affected, than others previously in good health.

The occupation of persons, as far as my limited observations went, made no difference in liability to take the fever; nor did the condition of life, as regards poverty or affluence.

A sudden fall in the thermometer, about the 15th day of September, made a considerable increase in the number of new cases, and the number of deaths.

Taking a radius of one mile to cover the area of the entire town of Canton, with its suburbs, we included a population, before the stampede, of about thirty-five hundred. About twelve hundred of these remained during the whole prevalence of the fever, giving a total of yellow fever cases of about eleven hundred, and deaths, from yellow fever, about one hundred and fifty. These figures may not be exactly correct on account of mixing some remote country cases of sickness and deaths in the list of town, as I have above limited it, but they are not much out of the way.

The epidemic visited every portion of the above area, diminishing gradually, as its food gave out, in violence and number of victims; giving us only six or seven cases during the week, between the 7th and the 15th of November. After this time, there was only one case of fever in the person of a refugee who, in six or seven days after returning to Canton, was attacked on the 6th of December.

Up to August 1st, when already the plague was in our midst, no sanitary measures, of any sort, were adopted looking toward prevention; but a good deal of street work, such as trenching along the side walks, cutting down weeds, etc., had been going on for several weeks, notwithstanding protests had been made against it. After August 1st, a very free use of crude carbolic acid and of lime was had recourse to as disinfectants, both having been daily sprinkled over the public streets and side walks, and in the private yards and houses liberally used. Their use did not seem to cause the least check in the progress of the fever. I am not aware of any injury to the sick from its use.

The losses and expenditures incident to the epidemic, approximating the truth as nearly possible have been kindly furnished me by the Howard Relief Committee of Canton, as follows:

The value of time lost by the sick, at an average of one dollar per day	$16,500 00
Cost of medical attendance, medicines, nursing the sick	18,000 00
Cost of funerals	3,000 00
Cost of sanitary work and quarantine	1,000 00
Value of bedding, clothing, etc., destroyed	1,000 00

The loss of profits on expenditures abroad of refugees was comparatively nothing, as only a very few persons left the county, and consequently drew their subsistence from the stocks which were removed from Canton.

Our best posted merchants and business men consider the local commercial losses by interruption and diversion of trade as virtually nothing, owing to the failure of crops. They agree that, had there been no fever to stop trade, a large amount of goods sold, being on credit, would not have been paid for.

It is not in my power to give a tabulated list of sick or dead, as the two or three of us physicians, who were left here, kept no account of names of our patients.

Yours, very respectfully,

A. T. SEMMES, M. D.

Epidemic Yellow Fever at Lake, Miss.

By F. E. DANIEL, M. D., Jackson, Miss.

The village of Lake, Scott county, Miss., is in the Pine district, one hundred miles due east of Vicksburg and forty miles west of Meridian, on the V. & M. Railroad. The country is hilly and the soil sandy, with an admixture of marl. The drinking water is mostly from dug wells, and is strongly impregnated with lime. There are abundant local causes for malarial diseases, and such diseases are usually prevalent there in the summer and fall. The town is surrounded on the southeast, south, west and partly northwest by the swamp of a small stream or creek, at an average distance, say, of a quarter or half mile—nearer on the south than elsewhere; in fact, the lower part of the village, in which are situated some of the stores, the railroad depot, some few dwellings and a sawmill, is in a low, marshy flat, continuous with the creek bottom or swamp; and in this flat there is a stagnant pool of water surrounded by rank vegetable growth, and around the sawmill are plentifully scattered fragments of lumber and sawdust in every stage of decomposition.

The population, at the outbreak of the fever, was about 350, including a considerable suburb known as Burgetown. Of these, about one-half were white and one-half colored people. Very few left in the beginning; some twelve or fifteen left the village later in the season, after having been exposed freely to the sick, dying and dead. All who fled, early or late, with one single exception, escaped attack. All who remained, old and young, male and female, black and white, with four exceptions, had the fever. Those four persons were constantly exposed. They were whites, females. It will be inferred

from the above, therefore, that yellow fever had never prevailed in Lake previously, and that none of its citizens had ever suffered an attack elsewhere.

Yellow fever having appeared in Vicksburg, the authorities at Lake declared quarantine, to take effect on 22d of August; but it was delayed twenty-four hours to permit a Mr. Sneed, of Vicksburg, a son-in-law of the Mayor of Lake, to come in. Sneed arrived on 22d, at night, and, with his family and baggage, went to the house of Lee Scott, his brother-in-law. Next day he was attacked with what was pronounced to be a very slight attack of malarial remittent fever; nevertheless, his recent exposure to yellow fever caused the authorities to suspect its true character, and he was isolated from the family and placed in a small office in the business part of town. He was scarcely confined to the bed, and in two or three days was about. He suffered no other attack, remained in Lake throughout the epidemic, nursed his wife and children, and perhaps others; was at his wife's bedside when she died of black vomit, and returned to Vicksburg late in October, before the subsidence of the fever there; one of his children, who was convalescent when he returned to Vicksburg, relapsed there and died, and Mr. Sneed suffered no other attack, and is still living. During Sneed's convalescence, a number of his male friends would assemble at his room and play chess or cards with him. Among them were Dr. McCallum, Dr. Tate, H. G. McFarland, the druggist, Lee Scott, his brother-in-law, Mr. Evers and Mr. Crouson; George Jones, colored, attended him as a servant. Crouson and his wife and Frank Tate died (having thrown up black vomit), before my arrival at Lake, which was on 7th September, at 1 P. M. Lee Scott died in six hours after my arrival, apparently of the effects of suppression of urine; I cannot say, as he was comatose and in a dying condition when first seen. Dr. McCallum died next day at 2 P. M., Capt. McFarland and Dr. Tate the next, Evers and the colored man, Jones, soon after; all of whom, except Scott, had the black vomit. So it will appear that all who frequented the room of this patient recovering from what appeared to be, and was pronounced to be, a *slight malarial attack*, died violently, within two weeks, of yellow fever. At the time of my arrival, there were, including the fatal cases above mentioned, some twenty-five or thirty persons down, and in every stage of the disease, from established convalescence to the opposite extreme. The grave cases terminated, most of them, fatally in a short time —the lighter ones went on to recovery. Very few new cases occurred within the next few days of my arrival. The disease appeared to be confined to *men*, with few exceptions, and altogther confined to persons who had come directly in contact with the sick or dead; each fatal case, especially, seeming to

be a focus, from which the poison was further diffused. In other words, it appeared to me at that time the disease was not *atmospheric*. It soon became so, however, from direct causes, presently to be mentioned, and swept through the entire population, sparing none except those above mentioned, and those who escaped in some unaccountable manner, who fled to the country after frequent and long continued exposure. As above stated, the first "crop" of cases terminated fatally or by recovery within a short time after my arrival, and few new cases appeared for several days. My first instructions on arrival were to close, air-tight, all the infected rooms (where fatal cases had occurred). and, leaving every article as it stood, caused sulphur to be freely burned, and to deny access to any of the sick except to the attendants. These precautions appeared almost completely to arrest the spread of the disease, after those previously exposed had gone through the incubation and aitack. Deceived, therefore, probably by the appearance of safety, in consequence of the rapid decrease in the number of cases, some parties, whose names it is unnecssary to mention, in utter disregard of my orders, opened up one of the infected rooms and placed the mattrasses and bedding on the front fence, on the main thoroughfare. Other parties afterwards did the same, and in a very few days there were some twenty persons attacked in rapid succession—this time not confined to the men, but extending to all classes, in every part of the village. By the 22d September there had been some twenty or more deaths. The corpses were interred in the burying ground, north of town, and very near, say, half mile from the center. On the night of 22d there was a heavy rain storm, which continued part of next day. The newly made graves, dug in the light, sandy soil, sank, and within twenty-four hours the half-exposed, putrifying corpses emitted a most offensive and deadly stench. Of course, the graves were promptly refilled and packed down, and lime and carbolic acid were freely used. The number of attacks then became very great, and in rapid succcssion, reaching at one time twenty-four, with nine deaths in twenty-four hours. The fever appeared at once to assume a most malignant form, and to develop fatal symptoms in an amazingly short time. Almost every one attacked about that time died, and died rapidly, and almost without an exception discharged the black vomit. The family living nearest the graveyard (widow and children, and mother-in-law and sister-in-law of Capt. McFarland), after having been some two weeks previously exposed to the case of Capt. McFarland, who died on the 10th September, and who continued to occupy adjoining rooms to his (which, however, had been made air-tight and fumigated), and who, up to this time, about 26th September, had remained in per-

fect health, were all, seven in number, attacked within twenty-four hours of each other, most of them throwing up black vomit within twelve to eighteen hours after being stricken down, and in thirty-six hours were all dead, save the youngest and feeblest child. I deem it important to state in this connection several facts: Dr. Gresham, a volunteer physician, occupied the room opposite the one in which McFarland died. He was violently attacked on night of 17th September, and was immediately removed to an outhouse, where, after an unusually severe attack, he recovered. He was ill at the time of the graveyard occurrence. A Mr. Jones and a Mr. Sterling, both of whom nursed McFarland, were sleeping in the room with Dr. Gresham the night he was attacked. They went to the country next day and escaped altogether, whilst the family who had also been more or less exposed to Dr. G., as well as constantly exposed to Mr. McFarland, and who, as stated above, remained, all died in rapid succession. The house is large, airy, well built, and is one of the most comfortable residences in the place. The premises were scrupulously clean and the family were well-to-do, refined and educated people. Furthermore, the house occupies a high elevation, removed from and overlooking the village, and there is, therefore, scarcely room for a doubt in my mind, that the inmates were directly poisoned from the gases arising from the graveyard, which was scarcely two hundred yards back of the house. In other words, the emanations thus arising undoubtedly gave a new impulse to the disease, and converted it into one of the greatest malignancy.

I am unable to give the date of the last case of yellow fever. With regard to the cessation of the fever, it continued after frost and ice, as long as there was a subject for it. Several refugees came in after frost, took the fever and died. Many persons used quinine as a prophylactic, without effect. It seems disinfectants were also useless.

With regard to an opinion as to the contagiousness of yellow fever, asked for in the circular of the Secretary, I answer that, *theoretically*, the disease is contagious; but my *experience* in several epidemics of the disease is strangely at variance with a theory which I *accept* as the true cause of the fever, and its mode of development and propagation; and it compels me to say that, so far as my observation goes, it is certainly *not* contagious. It would, perhaps, not come within the scope of the intention of the Board in getting up reports from physicians on the subject, to admit discussion on the question, or to accept individual cases or occurrences in support of an opinion; yet I will be pardoned, I hope, for overstepping the limit to mention one circumstance in this connection, to me most remarkable: Lowry's mill is two miles from Lake, in the midst of a dense swamp, and is reached by

corduroy roads. It is scarcely a village, but a community of some fifty or more persons, employes at the wagon works, with their families, who live in small houses scattered about through the woods. The inhabitants have all the appearance of chronic malarial toxæmia. John Clay, one of the "hands," contracted the disease at Lake, went to his room at the mill and died. His brother and some friends nursed him and bur'ed him—frequently lying on the bed and under the cover with him, for during his illness there was a cold spell. Neither his brother nor the other attendants took the fever. The room was closed and fumigated. There was simply a rough partition between this room and a "store," where a small stock of goods was kept. The store was closed also. Late in October, more than forty days after Clay's death, I saw a Mrs. Lee at Lowry's mill, perhaps half a mile from where Clay died, sick and dying of yellow fever. She had never been with Clay. On inquiry it was ascertained she had been frequently in the store, handling and selling the goods. No one else in her family had the disease, though her daughters were most devoted and assiduous in nursing her. This may be said by some to be simply negative evidence; but in my mind, especially when taken in connection with the facts stated above, that those who came in contact with the sick or dead, and remained in Lake, took the fever; and others, fully as much exposed, who left town, even late in the season, escaped entirely. And in further connection with many instances where I have known the disease acquired in an infected town, where the party would go to his home in the country and perhaps die, and no member of his family suffer, furnish to my mind proof, of a very positive kind, that yellow fever is eminently *not* contagious; or, at least, if it is so, it is only under very peculiar circumstances or conditions, which are not at all understood. It cannot be communicated by simple contact in a *pure* atmosphere.

The colored people undoubtedly possess greater powers of resistance to the disease, and greater power of throwing off or eliminating the poison when attacked, than the whites. They were not attacked, as a rule, till later in the epidemic. At first the disease was confined almost exclusively to whites, yet when attacked, if neglected or not properly treated, they would die, and die in the same manner as others, viz: by hemorrhage of altered blood from stomach or bowels, or by the effect of urinary suppression. But seen early and promptly attended they recovered generally, and sometimes under the most unfavorable circumstances—often in dirty, miserable cabins, with several sick at once, and frequently lying on the floor.

The death rate was highest with white adult females, reaching about 51 per cent. of cases; next fatal to white men, about

42 to 45 per cent.; third in point of fatality, white male children; fourth, colored men; white female children, only about eight per cent. died.

The mortality among children of both sexes was exactly 25 per cent.: eleven deaths out of 44 cases. Negro women almost invariably recovered, the death rate being 3 per cent., and colored of all ages and sexes, only 6.7 per cent. died—or 8 deaths in 116 cases. I prepared an accurate table on this subject for the Yellow Fever Commission, but failed to keep a copy, and I am able, therefore, to give only a synopsis of the same from memory.

The fatality of the disease appeared to bear an inverse ratio to the chances for recovery. Those most unfavorably circumstanced in respect to quarters, diet, attention by nurses and physicians, viz: the lower and poorer classes of whites and the negroes, suffered less loss, while the better classes of whites, more fortunate in the comforts necessary in sickness, died. The mortality was exceedingly heavy among the better classes.

Distinct remissions, and even intermissions, seemed to *characterize* the fever—not observed in previous epidemics—and in some three or four cases what would begin as apparently a chill and fever, in which the apyrixia was distinct, and during which the patient would be up and about the house, the febrile paroxysm occurring at precisely the same hour next day, would suddenly assume the form of the prevailing disease, the paroxysm lasting forty-eight, sixty or seventy-two hours or longer, and terminate fatally by coma, delirium or black vomit! Parotitis was also observed in some cases, and was a troublesome complication.

The total number of cases, from the best information I can obtain in addition to my own personal knowledge, was 330, with 78 deaths.

Dr. G. H. Jackson, now deceased, succeeded me in the treatment of all cases which occurred after 20th October. He and Dr. Bruner and Dr. Fowler also treated a large number previous to that date, and I have no reports from either of those gentlemen.

My esteemed friend, W. M. Thornton, Esq., who was the active and efficient President of the Relief Association at that place, has kindly furnished me with the estimates of the expenses and losses, as given below:

a. Value of time lost by those sick with the disease, estimated at $1 per day for 350 persons sick on an average for 14 days and *hors du combat* for 60 days, would give $21,000, but perhaps it would be fair to take half that amount, deducting half for women and children, say, therefore..... $10,500

b. Cost of medical attendance, medicines and nurses, 10,000

d. Cost of sanitary work, including quarantine.....	2,000
e. Value of bedding and clothing destroyed.....	200
f. Loss on profits of expenditures of refugees.....	250
g. Local commercial losses by interruption of business and diversion of trade, etc.....	10,000
Total.....	$32,950

The Epidemic at Holly Springs, Miss., in 1878.

By F. W. DANCY, M. D., Member State Board of Health.

The town of Holly Springs is the county site of Marshall county, Mississippi, in north latitude 34° 45″ and longitude 12° 15′ [illegible] Washington. The country around is rolling, but not mountainous in the yellow loam and orange sand formation, being the highest point in the State, having an altitude of 720 feet above the level of the sea. From the table land, an elevation on which the town is situated, there issues three spring veins, which, in the first settlement of the place, were covered by the evergreen holly, which gave name to the town; but now the hollys are all dead, and the bottoms filled with sand, which sand bottoms, from fifty to one hundred feet wide, are dry during the day in summer, from evaporation, but are damp at night, the water rising in many places to the surface. The water used for drinking is from shallow wells, at an average depth of twenty feet, more or less impregnated with lime, and, perhaps, with other minerals. There are also some deeper wells, from forty to fifty feet, which last contain a purer water, not being so subject to the filtration from the surface of the earth through the orange sand, which lies only a few feet from the surface. The town was laid off in 1836, making the age of the place forty-three years. It has always been noted as being one of the healthiest, if not the most healthy, place in the State; has been less subject to malarial diseases than other places in this section of country; has never had an epidemic of any kind from its earliest settlement until the past year, when it was so severely scourged by yellow fever.

On the 12th of August, 1878, after the yellow fever had been declared epidemic at New Orleans, Memphis and Grenada, a Board of Health was appointed for Holly Springs, consisting of three physicians of age and experience; of which Board the author of this report was chosen President. This Board held a meeting on the day of their appointment, when they advised the Mayor and Aldermen of the town at once to put the city in the best sanitary condition that could

be done at so late a season of the year; besides this, the President of the Board offered a resolution recommending a rigid quarantine of the place. This resolution was voted down by the Board of Health (two members dissenting), also by the Board of Mayor and Aldermen, and a large portion of our most intelligent citizens opposing any action on a resolution that bore quarantine on its face. They urged that our atmosphere was too pure for yellow fever to spread; that we had never had an epidemic, the altitude was too great for the spread of infectious diseases, and that it would be cruel and inhuman to close down our gates on those who were fleeing from the scourge of infected districts.

On the other hand, it was urged by the President of the Board of Health, supported by Dr. Compton and other medical men of the place, and many citizens who thought with him, that although we had never had an epidemic in our midst, that we had never before had so protracted a heated term, and that we were never before so surrounded by infectious districts (almost at our doors), and that we were not safe without taking steps to prevent persons from stopping here from infected districts—or, in other words, that it was necessary to establish a rigid quarantine.

After much and almost angry discussion on the subject, our gates were left open to refugees from infected districts; they came, and the result is known to the world.

On the 17th of August, 1878, the Lake children (four in number) arrived here from Grenada, and were placed in a private boarding-house near the northwest corner of the public square, the hotels already declining to receive persons from infected districts.

On the 18th of August, Mr. E. L. Downs and Mr. Martin arrived from Grenada, and were placed in a brick office near the south-west corner of the public square.

On the 20th of August, the Wiltshire family, three in number, came from Grenada, and were located at the railroad depot, half mile east of the public square.

On the 25th of August, Mr. Levy arrived from Memphis and was placed in a private family, about two hundred yards south of public square.

On the 12th of August, came Mr. Makin, from Memphis, and was situated near the depot—making in all eleven persons, occupying five different points in the city, as so many foci of infectious disease.

The brick office in which Downs and Martin were situated, is at the corner of two streets, one running east and west, the other north and south, opposite the Presbyterian church—the highest point in the town and consequently the highest point in the State, and midway between the east and west portions of Holly Springs—the most central location in the place.

Adjoining the said office occupied by Downs and Martin is a frame office, some thirty feet south of it, then owned and occupied by Col. A. W. Goodrich, the ex-Mayor of Holly Springs.

Mr. Downs was taken sick on the 19th of August, the day after his arrival, and Col. Goodrich, after remaining one night and a part of one day at his own office and bed-room, left it and took lodging at one of the hotels, some three or four hundred yards from Downs and Martin, about two hundred and fifty yards from the Lake children, and something over two hundred yards from Mr. Levy, from Memphis.

Mr. Downs, as above said, was taken sick on the 19th and died on the 25th of August, and Miss Nelly Lake died on the same day—both refugees from Grenada; and Col. Goodrich (the first case among our citizens), whose office was the nearest room to the one occupied by Downs and Martin, was taken sick on the 28th and died at his lodgings at the hotel on the 31st of August.

On the 1st of September, the day after Col. Goodrich died, there were not less than twenty cases, occurring in near houses on the east and west of the office of Messrs. Downs and Martin.

From this time the disease spread over the town, and to show its malignancy only six recovered out of the first sixty cases. Up to the time the epidemic commenced the town was never more healthy—not a single case of disease of a malarial character belonging to the place, and the surrounding country almost exempt from fever of any description; and it is a remarkable fact that we had less bilious fever in the county than has existed for many years; this is the testimony of the physicians both in town and country. The epidemic extended its ravages over the whole town and outside of the corporate limits eastward, say, two miles, as far as the premises of our departed friend, Dr. W. M. Compton, where he was erecting a private asylum for the insane. To the west, one mile outside of the corporation would cover its limits, and to the north and south scarcely a case occurred outside of the corporation lines.

The population of Holly Springs before the epidemic commenced, was 3500; during the epidemic, 1500; of this last it is estimated that 300 were whites and 1200 were blacks—or five blacks to one white. We had, in all, about 1440 cases, with 304 deaths. I have not been enabled to give the proportion of cases of whites and blacks, for committee after committee were stricken down who kept the books, and I find only a record of the deaths; but nearly all who remained in town had the disease in a graver or lighter form. Of those who died there were:

Adult white males	130
" females	70
Colored adult males	48
" females	29
Children, white	15
" colored	12
Total	304

From the above it will be seen that the mortality was much greater among the whites than the blacks. The whites show a loss of 71.66 per cent., whilst the blacks show only 7.41 per cent.; yet the blacks were nearly all sick, but many so lightly as scarcely to take their beds or to apply for treatment. They certainly possess a greater resistance to the yellow fever poison than the whites.

I know of no facts which would go to show that the disease was of local origin, nor were there with us any unsanitary conditions that would tend to the propagation or mortality of the disease. We were probably influenced by the protracted heated term of July and August, rendering our atmosphere suitable to receive and multiply the germ of yellow fever.

It would be a matter of interest in this inquiry or interrogation, to compare the hot months of former years at this place with the same months for 1878, and have sought industriously among our people for a thermometric table that would give me the temperature for June, July and August for the past year; but in vain.

Thus it would appear (and to me it is plain,) that the yellow fever was brought to Holly Springs by Messrs. Downs and Martin, the Lake children, and the Wiltshire family, from Grenada, and by Mr. Levy and Mr. Makin from Memphis, but its first start in the town among *our citizens* can be traced directly to the rooms occupied by Downs and Martin, from Grenada.

The last death that occurred was Miss McDermott, at the railroad depot, who died on 24th of November, and the last case was taken sick on 24th November, but recovered.

I attribute the cessation of the disease to cold weather, having had several heavy frosts before it ended.

The period of incubation seemed to be from five to nine days.

As disinfectants, we used lime, sulphate of iron and carbolic acid, without the slightest benefit—producing a very unpleasant smell over the town, as it was used in nearly every family. I look on yellow fever as an exotic and zimotic disease, not contagious, but highly infectious.

The expense to the town and county, caused by the epidemic, can scarcely be estimated, as all the people left in the city (save the grave-diggers and the undertakers) and those

for miles around in the country, ceased to engage in any kind of productive labor.

The time lost by the sick and those who left the infected district, put at the low sum of $1 a day, would amount for sixty days, to	$210,000
Cost of sanitary work	500
Cost of funerals	10,500
Cost of medical attention and nursing	40,000
Value of bedding and clothing destroyed	3,000
Commercial losses by interruption of business and diversion of trade	75,000
Amount paid out by those who left their homes	100,000
Total	$439,000

Which is a small estimate.

The author of the above report is under obligations to friends for many of the statistics furnished, as he was stricken down early in the epidemic, and was not able to return to his field of labor until the fever had ceased.

The Epidemic at Greenville, 1878.

By R. S. Toombs, M. D.

In compliance with your request to write the history of our late epidemic of yellow fever, I shall be brief, and as nearly as possible answer your interrogatories *seriatim*.

Greenville is situated upon the highest point between Memphis and Vicksburg, above overflow, and about one hundred and fifty feet above the sea level. We are bounded on the north and east by cultivated fields; on the south by an area generally open, but intersected with skirts of timber and sloughs; on the west by the Mississippi river. The country back is low and flat and not well drained. Yellow fever has never visited the city before.

On the 26th July the municipal authorities established a quarantine, but owing to the scarcity of means to properly equip a station, erect suitable buildings, etc., we found great difficulty in enforcing a system sufficiently strict to afford security against the introduction of the disease. Although goods supposed to be liable to infection were retained in quarantine, yet it is feared that the Board of Health, owing to conflicting opinions, admitted articles infected.

On the 14th August the "City of Vicksburg," a steamer, about ten days from Vicksburg (then infected), and but two days from Memphis (also infected), laden with freight from St. Louis and other points above, landed two miles above our

city. She was there boarded by our Health Officer and three other gentlemen. Finding no case of fever on board, these gentlemen came on the vessel to the city wharfboat, where she was permitted to land her cargo, consisting of various articles of cotton and woolen fabrics, groceries, etc. A crowd had gathered about the landing while the boat was discharging, and the goods were carried to their destination by draymen, where they were stored and sold as usual. Mr. Marshall, one of the party who boarded the vessel, took the fever in just eleven days, and died of black vomit. Others in the vicinity took the fever, and among the first deaths was a drayman who handled some of the boat's cargo.

I believe that steamboats are very susceptible of infection, and may we not suppose that a vessel remaining for hours in an infected port, becomes the reservoir of the same foul and pestilential air that pervaded the ill-fated city of Memphis?

The fever first appearing in the southern part, spread gradually to the northern limit of the city; but few cases occurred in advance of its marches, and these were traceable to direct personal contact with the infected district.

In reference to local conditions influencing the mortality of the disease, we believe that the degeneration of health, incident upon a residence in an intensely malarial region like ours, adds to the mortality of all epidemic diseases. Apropos to this point, we would respectfully call the attention of the Board to all river towns situated on a level with the flood-tide of the river. When the river is full, or in excessively rainy seasons, our alluvial soil, like a sponge, absorbs the surplus water to the full extent of its capacity; this percolates through the soil so that a well or cracked cistern will fill to the surface. Of necessity, all pits, sinks or privy vaults will communicate their filth to this water, which permeates the entire substrata with the germs of pestilential poison. We would, therefore, urge some legislation requiring municipal authorities to abandon these and use the box vault, or other contrivance that will enable them to remove deposits at short intervals, and thereby obviate one of the greatest sources of disease.

Our epidemic seemed to have run its course by the 20th of October, but some deaths occurred after this time, some of whom were returned refugees, who occupied ill-ventilated apartments. The last case occurred on the 25th and died on the 28th November with black vomit and suppression of urine.

We are disposed to think the period of incubation runs from five to twenty days. We think the disease infectious, not contagious. We are inclined to disbelieve the theory of ærial currents as a means of conveyance of the yellow fever poison.

It is our observation that negro and Chinese residents not

only enjoy less susceptibility to the disease, but also a greater resistance to its morbific influence.

As to the influences of habits, we believe, and we are sustained by observation, that persons subject to alcoholic dissipation are not only more susceptible to the disease, but enjoy less resistance to its pernicious effects.

We know of no instance were prophylactics were effective.

Our population before the epidemic was about 2800, and during the epidemic about 1300.

We think, without positive data, that we had about 1100 cases. No record having been kept, it is impossible to give age, sex and color. Our number of deaths is as follows:

Adults—males, 162; females, 90. Children—males, 23; females, 21. Whites, 195; blacks, 101; Chinese, 3.

As to precautionary measures prior to the outbreak, we used every means to cleanse and purify the city, by the free use of lime and carbolic acid. Vaults and privies, etc., were saturated with a solution of copperas, while all the debris about the city was removed or burnt.

After the occurrence of the first cases, efforts were made to check its progress by burning the bed-clothing of the sick, and the continued use of the disinfectants above named. Many families, in advance of the steady progress of the disease, kept their rooms full of smoke from tar and sulphur, with no avail. We are decidedly of opinion that disinfectants are useless in checking the progress of the fever, and I doubt not that they are often imprudently used, to the great distress if not disadvantage of the sick. In proof of the position we assume relative to the inability of carbolic acid, etc., to destroy the supposed germ of yellow fever, we would state that a man who had lost his legs from injury, constantly remained in our engine house (almost secluded from communication), where were stored open barrels of tar, carbolic acid and lime. These articles were scattered over the floor, and we may truly say he was literally *immersed in disinfectants*, yet took the disease and died of black vomit.

Through information received from the efficient chairman of our relief committee, and other parties concerned, I can answer your interrogatories relative to our financial losses, as follows:

Value of time lost by those sick with the disease....	$30,000
Cost of medical attendance, medicines, nursing, etc.,	32,000
Cost of funerals.....	5,000
Cost of sanitary work, expense of quarantine, etc.,..	3,000
Value of bedding, clothing, etc., destroyed.....	3,000
Loss of profits on expenditures abroad of refugees..	50,000
Local commercial losses by interruption of trade..	100,000
Total.....	$223,000

The Epidemic at Port Gibson, 1878.

By R. G. Wharton, M. D., Member State Board of Health.

The town of Port Gibson is situated on the south bank of the little Bayou Pierre, on the second bottom seven miles from the Mississippi river, at an altitude of 220 feet above the sea level. It is naturally well drained, and has always been considered a healthy town. The population is about 1100. It was visited by an epidemic of yellow fever in 1853, which attacked nearly every person who remained in town, causing 50 deaths out of 600 cases. Again in 1855, it prevailed as an epidemic, causing 17 deaths out of 50 or 60 cases. The first case of yellow fever in the late epidemic occurred on the 3rd of August, 1878, in the person of August Samuelson, a Swede, who was employed on the railroad. This man was at the railroad landing on the 23d of July, when the steam tug Jno. D. Porter landed there to put off some freight (iron ties.) While the steamer was at the landing, Samuelson went up near the place where she lay and several of the boat's crew came ashore and were engaged in playing some game, while he stood among them and looked on. Eleven days from that date, to-wit: on the 3d of August, Samuelson was taken ill at the depot in Port Gibson, and was visited by a number of his fellow-laborers, and by several other persons, especially a colored man Geo. Goodrich, nursed him for several hours that same day. Dr. I. G. Strowbridge, late of Cincinnatti, who had never seen a case of yellow fever, was sent for and he treated it as a case of malarial fever. On the third day of his illness the doctor had him removed from the depot, which is on the outskirts of the town, to a boarding house on the main street. During the whole of his illness, both at the depot and at his boarding house, his friends had free and unrestricted intercourse with him. About the third or fourth day of his illness our town council having heard that several cases of yellow fever had been put off the Porter at Vicksburg, on her passage up, aud that cases of fever were reported in New Orleans, organized a Board of Health and established a quarantine against all persons or goods coming from an infected district. In a day or two thereafter the County Board of Health quarantined the river front of the whole county, and this was kept up until some time after the fever had been epidemic. At the time of the establishment of the quarantine, it was not known that Samuelson had been exposed to infection. From this statement it will be seen how useless the quarantine was as a protection to the town.

I was invited by Dr. Strowbridge, on the 8th of August, to see Samuelson, and found him in a moribund condition and pronounced it a case of yellow fever. There was an immediate stampede of the citizens on hearing this news, all that day

and night and during the next day, between four and five hundred leaving as fast as they possibly could. Samuelson died the same day. The next case was that of Geo. Goodrich, the person mentioned above as having been with Samuelson, the first day of his illness on the 3d of August, and he was attacked on the 14th. I was invited by Dr. Strowbridge to see him on that day, and pronounced it a case of yellow fever. The next case was that of a negro woman, a servant at the boarding house to which Samuelson was carried on the 5th of August, and she was taken ill on the 16th. The next cases were those of two little boys, one the son of the landlord of the boarding house, the other his playmate, both of whom visited Samuelson several times before he left the depot, and they were attacked on the 17th. On the night of the 17th and on the 18th there were at least thirty persons stricken down with the fever, and they were scattered over a good part of the town. From this time the disease spread rapidly, so that by the 25th of August there were at least 150 to 160 cases. There seemed to be no local conditions which had any influence in retarding its progress. Those who lived comfortably in good houses were attacked as readily as those who neglected all sanitary measures. In the first cases it will be observed from the foregoing narrative that the period of incubation was precisely eleven days. But after the fever had become epidemic this period was in many cases much shortened. This was seen in the case of a Catholic priest who came here from Wisconsin in the midst of the epidemic, arriving one night and visiting several of his parishioners on that same night. He was stricken with the fever the next afternoon in less than twenty-four hours after his arrival. The usual period of the incubation of the fever after it has become epidemic may be stated to be from five to seven days. The epidemic prevailed here until it had attacked nearly all who were not protected by a previous attack, only about fifteen or sixteen white persons escaping, perhaps as many negroes also. A good many persons who were exposed to the fever in the country came to town before a freeze and I remember only one who escaped an attack. There were several cases of the fever developed in refugees who returned after the freeze, but it was because proper means had not been employed to destroy the fever germs in their houses. I observed that during a cool spell in September, when the thermometer fell to 56° there were fewer cases developed, and that as the weather became warmer, a larger number were attacked. I regard the fever to be infectious both by persons and fomites. I have no experience of any facts which lead me to believe that the poison of yellow fever is conveyed by the winds except to a very short distance. I observed no difference as to susceptibility to the disease in the different races, in the sexes, in the

different ages, or resulting from difference in habits. But there was a marked difference in the rate of mortality between the whites and the blacks and the mulattoes; the mortality, as is well known, being very much greater among the whites than among the blacks, and the mortality among the mulattoes being intermediate between that of the other two races. Very few old persons among the whites survived an attack; a good many among the blacks. Again, the mortality among children under five years was much greater than among those who were older. The intemperate drinkers rarely recovered. The fever was very fatal to dyspeptics, but when they did recover, in most cases, their health became better than before the attack. I saw no cases where prophylactics were effective in warding off the disease, and I knew of a number of cases where they were tried. There was no doubt of the protective power of quarantine when properly enforced. All those plantations in this county which observed a strict non-intercourse with the sick, and which allowed no goods to be brought to them that could carry the poison escaped a visitation of the fever. While on the other hand, in nearly every case, where the fever prevailed on the plantations, it was traced to intercourse with persons coming from town, or to goods carried from Port Gibson or from Vicksburg, or from other infected plantations. In the very few cases where it could not be traced with absolute certainty, it was supposed with good reason, to have been carried by negroes who were afraid to criminate themselves.

LOSSES TO THE COUNTY.

In estimating the losses caused by the fever to the town and county of Claiborne, we shall be guided to some extent by the calculations made by the Board of Experts authorized by Congress to investigate the yellow fever epidemic. There were about fifteen hundred cases in the town and county and about two hundred and seventy-five deaths. Let it be assumed that one-half of the deaths were minors, and estimating each minor as worth to the community four hundred dollars, and each adult eight hundred, the loss to the county from these deaths would be $165,000. Deducting the deaths from the total number of cases there would be 1150 cases left to be attended to. The average duration of their illness and convalescence would be twenty-five days and the value of their time lost at fifty cents a day would be $15,625 00. Add to this the value of labor diverted from useful production by attendance on fifteen hundred sick for ten days at fifty cents for each person so occupied per day, and it amounts to $7,500, Six hundred persons left their homes for ninety days, and their time being counted at fifty cents a day would be worth $2,700.

Money spent by refugees more than their ordinary expenses at home may be safely put at $10,000. Summed up as follows:

Value of lives lost	$ 165,000 00
Loss of time of the sick	15,000 00
Value of labor diverted by waiting on sick	7,500 00
Value of time lost by refugees	2,700 00
Money spent by refugees above their ordinary expenses	10,000 00
Total	$ 200,000 00
Besides this add expenses for professional nurses	12,000 00
Cost of funerals	2,000 00

Great loss was sustained by the crops being wasted, there being no person to gather, amounting at a low estimate to $30,000. About $20,000 was charitably contributed.

The Epidemic in Water Valley, 1878.

By H. A. GANT, M. D., President County Board of Health.

The town of Water Valley, as its name implies, is situated in a valley along the course of a constantly running stream of water, and upon the line of the Chicago, St. Louis & New Orleans Railroad, about thirty-one miles north of Grenada and forty-eight miles south of Holly Springs. Its elevation above the sea level is supposed to be about four hundred feet, and although two cases of yellow fever had been imported to the place previous to 1878, the disease never prevailed as an epidemic.

On the 12th day of August, 1878, when the fever was reliably reported to be prevailing as an epidemic at Grenada, the Mayor of Water Valley, at the suggestion of the Board of Health, ordered the town to be quarantined against all infected districts, and compelled all passenger trains from the south to stop and change engines outside the corporation lines, permitting no person from an infected place to stop inside the town, and compelling the trains to run through the town at a rate of ten miles per hour. Guards were placed out on the different roads to enforce these orders.

The quarantine regulations were, however, soon found to be ineffectual, as several persons from the south, and supposed to be from Grenada, evaded the guards, and made their entrance into the town; and besides it was found to be impossible to prevent engines, conductors and brakemen from stopping in the town as long as trains were permitted to run, this being

the termination of one of the divisions of the railroad and and the place at which the engines and crews were exchanged. Could strict and absolute quarantine rules have been enforced, it is believed we might have escaped the fever, for Coffeeville, on the south, midway between Water Valley and Grenada, and Oxford on the north, midway between us and Holly Springs, both enforced strict quarantine and both escaped.

The first case of the fever that occurred in our town was a former resident of this place who had been for several weeks at work at his trade in Grenada, which place he left on the 10th of August; arriving at Water Valley in the morning he was taken sick the night of the same day. He evidently contracted the disease in Grenada. This case was isolated and quarantined. He had a well marked case of the fever, but recovered after an illness of several weeks.

At this time our citizens were never more healthy, and the sanitary condition of the town never better. In addition to thorough cleansing and disinfection of all obnoxious places of a public character, the town was divided into districts and a physician appointed to each district, whose duty it was to see that all private premises were perfectly cleansed and thoroughly disinfected with lime and carbolic acid, which were used in the greatest abundance, the town using a car load of lime which had been kindly donated by the Chicago, St. Louis & New Orleans Railroad.

The next case occurred on the 26th of August. The victim was an engineer who had been running on the southern division of the railroad, and through Grenada. It is believed he contracted the disease in this way. He died on the fourth day of his illness. This case, like the first, was quarantined and isolated. The second had no connection with the first case. It is proper, however, to state that both of these casse were confined in houses immediately in the center of the town.

One week from the death of the second case another occurred, which is supposed to be the first case that originated here, as it is impossible to prove that he was ever exposed to the disease previous to his attack. Unauthenticated reports, however, are afloat to the effect that he, in company with another gentleman who died soon after, went to Grenada one week before he was taken sick. He was visited by many of his friends, and in a few days there were a number of them down with the disease and also others who had not seen him. On the 14th of September there were twenty new cases, and the disease was declared to be epidemic. All the cases up to this time were white males, except two colored males. At this time there were between four hundred and five hundred persons, mostly blacks, left in Water Valley, which previously had a population of about three thousand.

The fever raged with fearful fatality until it was checked by the frosts which fell on the 16th of October; after that date it was not so malignant, though cases continued to occur until after the middle of November, several returned refugees having fallen victims. The last case occurred on the 23d of November.

There were no facts in my observation that led me to believe the fever was of local origin, and no evidences that the poison was conveyed by the winds outside the area of infection, nor was the influence of the disease extended by malaria or unsanitary conditions of any kind, or held in check by disinfection with lime and carbolic acid, fumigation with *burning* sulphur, burning of pine-kilns, firing of anvils or any measures of prevention, and in no instance were prophylactics effective in warding off the disease. It was generally noticed that after a day or two of hot, damp weather, a large number of new cases would occur, and during such weather the disease was more fatal, thus showing that the propagation of the disease was dependent upon the conditions of heat and moisture of the atmosphere. The usual period of incubation of the disease was from two to five days.

Persons who were exposed to cases who were taken sick in the town and carried to the country, did not have the disease, and it is a remarkable fact that the infected atmosphere seemed to be confined within narrow limits, extending north and south along the valley in which the town is situated, and in no instance was there a case reported outside the valley unless the subject had been exposed in town.

Those persons seemed to be most susceptible to the disease whose occupations caused them to be up a great deal at night. The railroad watchmen and telegraph operators were peculiarly liable to it. The disease was in general mild and easily controlled among the negroes, many of them getting well without scarcely any treatment at all. It was very fatal with persons of irregular habits of all kinds, but especially with those addicted to regular drinking. Drinking did not, however, seem to predispose the person to an attack.

The total number of cases were two hundred and fifty, of whom more than one-half were negroes. Total number of deaths, seventy-five.

Adult males, white	44
" colored	8
Adult females, white	7
" colored	5
Children, males, white	3
Children, females, white	5
" colored	3
Total	75

a. The value of time lost by the sick.... .....$1,840 00
b. Cost of medical attendance, medicines, nursing the sick, etc..... ..... 3,988 00
c. Cost of funerals, coffins, hearse hlre etc..... 1,850 00
d. Cost of sanitary work, expense of quarantine, guard duty, etc..... 1,775 00
e. Value of bedding destroyed..... 1,125 00

Loss of profits on expenditures abroad of refugees would be guess work. It is impossible to compute the commercial losses by interruption of business and diversion of trade. Business was at a complete standstill for nearly three months; perhaps $60,000 would cover the damages, though the town perhaps will never regain a great deal of the trade that was lost by the epidemic.

The Epidemic in Hernando, 1878.

By J. M. Jones, M. D.

Hernando is supposed to be the third village or town in the State in altitude above the sea's level; has a salubrious atmosphere, and its sanitary surroundings would indicate a perfect immunity from a contagious disease not indigenous to the climate. Yellow fever had never visited the place in epidemic form before the recent epidemic, commencing in September and ending in November, 1878; but we had had previous cases brought from infected districts. In 1873 I treated several cases in this place, with no apprehension whatever of a spread of the disease from the refugees who had contracted the poison previous to their departure from the infected localities. We did not, in our late epidemic, enforce a quarantine until after cases occurred in our town among refugees, and a knowledge of the fact that the disease had spread in epidemic form in other localities and villages equally as much removed and protected from a prospect of the spread of any contagious disease as our town. After the corporation Board of Health passed a quarantine restriction, it was not violated, as far as the municipal authorities were able to support the Board; but our ordinance came too late to protect our less timid and "couldn't-get-away" citizens from the sad havoc of the insatiable yellow fever.

On the 3d day of September, the first well-marked and pronounced case of yellow fever made its appearance in our village. The subject was a policemen, by the name of Campbell, from Memphis, Tenn. He came directly from the infected district at Memphis, as a refugee, and was stricken down in twenty-four hours after his arrival. The next case

that appeared was Mrs. B. P. Anderson, who had contracted the disease in Grenada, having gone there from this place to nurse her husband, who died there as a martyr of the noble Howards.

There are no facts to impress my mind with the belief that the disease was of local origin. At the time and previous to the outbreak of the disease, by sanitary measures and prophylactic means, we supposed we enjoyed a sanitary condition that gave us perfect immunity from yellow fever, basing our opinion on the fact that it had never before, with less favorable conditions, spread to the citizens in epidemic form, and we did not, up to the time of the last epidemic, believe it to be a contagious, and, only in a limited sense, an infectious and portable disease.

The cases that occurred latterly seemed equally as fatal in character as those that occurred in the beginning of the epidemic, all things being equal. The *very last* case occurred with a citizen, on the 11th day of November, whom I dismissed on the 23d of the same month, fully restored. But there were numbers of cases that were very slow in their convalescence—some not feeling that they were free from the debilitating effects of an attact for months. I myself had a very mild attack in November, after I felt fully persuaded that the poison had been steadily eliminated from my system during the months of September and October, and I have never felt fully restored to my usual strength since. I do not think that I would have suffered with an attack at all, if it had not been that during the latter part of the epidemic the work was too excessive, and I overtaxed my physical ability. We had only four physicians, one of whom, Dr. J. W. Powell, died early with the disease, and after his death another one of our number, Dr. J. H. P. Westbrook, had a very severe and protracted spell, which threw all of the work on only two of us, Dr. L. L. Saunders and myself. I am disposed to think that nothing but *freezing* weather, or an exhausted material will arrest the progress of the disease, and that the self-limited idea of seventy or eighty days' duration, claimed by good authority, is a mistaken notion and dangerous error. We found the greatest number of cases would be taken down in warm, sultry weather, and the greatest number of deaths would occur in sudden transitions of temperature from warm to cold. Humid conditions of the atmosphere likewise augmented our mortuary list. Sometimes we would have a number of patients doing well, and if a sudden atmospheric change took place, in twenty-four hours' time all seemed to suffer the ill effects, and numbers to a fatal terminus. The physical organism seems more keenly alive to atmospheric changes in this disease than in any other that I have ever observed. When these changes I refer to would occur, while the sick

room, as far as the attendants, nurse and physician could observe, would be carefully watched and equalized, and made to conform properly to the thermometer at sick room height, the patient would realize more quickly than the best thermometers could tell the perceptible change, and frequently disastrous results.

As near as I could approximate to the state of incubation, it varied from about five to fifteen days, according to the susceptibility of the subject.

I think this epidemic of yellow fever displayed most malignant features of a highly infectious and unmistakeably contagious character. I do believe that the yellow fever poison may be conveyed by the winds for a short distance, but I am inclined to the opinion that it is too heavy in character or too gregarious in nature to be conveyed to any great distance; in other words, it depends for its vitality on the temperature of the atmosphere and the character of its pabulum. In my opinion, the malignancy of the disease in each individual case depended, in a great measure, upon the condition of the subject *anterior* to the attack—all depressing influences favoring its aggravation. The negro race manifested the mildest types of the disease. I accounted for this from the fact that they, as a class, suffered very little mental depression; being incapable of taking a comprehensive view of the situation, they were not depressed with so much anxiety as white people. The infant at the breast manifested the greatest resistive force to the disease, and, indeed, where they were attacked, as far as my observation leads me, the symptoms were mild in character. I accounted for the mild type on the same grounds that I would in the negroes' attack, and the fact of their resistive capacity, I attributed to the active eliminating powers of the infant organism. I am inclined to the opinion that all who breathe the intensely infected atmosphere have their systems saturated with the poison; and why any should fail to become a diseased victim results from the fact that the poison is more rapidly and constantly eliminated; and why in the future that one attack should give immunity results from the fact that the former possessor or zymotic poison, that held sway in the system, used up all the pabulum, and after visitors of like nature would find nothing to feed upon after the hungry wretches took their departure. I do not believe that there is any specific prophylactics but freezing weather and rigid quarantine. I do, however, hold the opinion that *quinine,* to prevent tissue metamorphosis, and stimulants to assist the emunctories, if taken regularly, but not excessively, *anterior* to an attack, would in some measure ward off an attack, and, in a great many cases, does modify a "would-be" severe attack into a mild form of the disease.

I think rigid quarantine will furnish the only sure protec-

tion, but the poison gradually extends itself in every direction from the centres of infection.

I have never had an opportunity to observe cases in but three epidemics, and consequently can offer no very extended comparisons, but will give my opinion for what it is worth on so limited a basis, as to the symptoms and deportment of the disease as observed in individual cases. After an individual was taken down in the epidemic of 1878, his temperature remained *higher longer* than in any case observed in either of the other two epidemics, and, consequently, were proportionately more fatal; besides, this last epidemic manifested unmistakeable indications of portability, infection and contagion.

The population of our town was, before the epidemic, between seven hundred and one thousand. During the epidemic we had to remain during the entire time, citizens and refugees, in the corporate limits, about two hundred and fifty. Out of this number, we had two hundred and ten taken down and seventy-six fatal cases. The number of whites and negroes that remained were about numerically equal. The number of deaths among the whites, 60; number of deaths among negroes, 12, mulattoes, 4; children, 12; adults, 64.

We adopted every sanitary measure and prophylactic means in the way of cleanliness and disinfectants to protect the citizens that an intelligent Board of Health could devise. We used lime, carbolic acid, bromo chloroalum, sulphur, copperas, etc., none of which were protectively effective in preventing the extension and continuation of the disease. After the disease in its fatal results put science at naught and skill at fault, we burnt the bedding of the dead, and as thoroughly disinfected the premises as the circumstances and times would permit, but all to no purpose in staying the progress of the disease.

Our financial losses in time and trade among those who remained in the corporate limits would be about $50,000, as they could do nothing else but look after the sick or bury the dead. Our medical attention and medicines would not exceed $2500. Funeral expenses would not reach a greater amount than $1500, inasmuch as many who under other circumstances would have been elaborately cared for, in the hurry and emergency had to wrap the drapery of his couch around him and be laid in a pauper's grave. Our quarantine expenses, except in a commercial point of view, was nominal —after the epidemic began it was entirely neglected. I suppose one thousand dollars would cover the loss sustained in the way of clothing and bedding. I am disposed to believe the interruption to trade, expenses of refugees abroad and after paralysis to business would not fall short of seventy-five thousand dollars.

The Epidemic in Harrison County, 1878.

By CHAS. PELAEZ, M. D., Quarantine Physician and Health Officer.

Harrison County is located on the Mississippi Sound, midway between the cities of New Orleaus and Mobile; the New Orleans & Mobile Railroad running its whole extent from west to east.

The soil is of a sandy character, and covered with pine timber. No swamps exist in the vicinity of the sea coast, and we are altogether free from malarial diseases.

Yellow fever has prevailed in the towns of Pass Christian and Biloxi whenever it has shown itself in an epidemic form in the city of New Orleans; Mississippi City, the county seat, escaping until the last epidemic when it suffered severely.

The town of Handsboro was visited by yellow fever as an epidemic in the year 1858, remaining exempt until 1878, when it made its appearance again.

Harrison County was quarantined against foreign ports, but owing to our utter inability to make it effectual as against the city of New Orleans, we were compelled to allow our ports to remain open; fugitives from the infected city pouring in our midst, both by land and water.

Health ordinances were enacted by the Board of Health of the county but owing to the cupidity of some and the carelessness of others, it became a matter of impossibility to isolate the cases. In every instance where it came to the knowledge of the Health Officer, that a case of yellow fever existed in the neighborhood, disinfectants were used, such as carbolic acid, sulphate of iron, permanganate of potassa, Girondin disinfecting fluid, etc., the bedding and clothes used by the patient were subjected to the boiling process, and mattrasses burned (and in this connection let me say, that the use of disinfectants for the purpose of arresting the progress of yellow fever is an error. In my humble opinion the only agent that will effectually destroy yellow fever is an intense degree of cold, and the only means of preventing its spread is rigid non-intercourse.) The first case of yellow fever in every town in Harrison County could be clearly traced to importation from the city of New Orleans, parties contracting the disease there, and fleeing panic stricken, during the period of incubation, which unfortunately was long enough to allow the patients to spread the disease nearly over the whole county.

Owing to the fact that my duties as Health Officer and Quarantine Physician of Harrison County were arduous, and having a great many cases of fever under treatment, I had but little time to take any notes; and the facts which I now give you are from memory, and they are substantially correct. Yellow fever is an exotic, never originating in the United States, and the few cases that do occur in New Orleans during non-epi-

demic years are due solely to the fact that the germs have escaped the destructive effect of freezing cold. I make this statement without fear; it is my honest conviction, arrived at after closely studying this terrible disease since 1858, in the city of NewOrleans.

It is a contagious disease in every sense of that word, and the fact that you may, (as has been done in the city of New Orleans repeatedly) confine the fever to certain localities by using proper means, will go a long ways in proving the assertion correct. It is true that after the atmosphere becomes surcharged with the germs of this disease, that it clearly becomes infectious and epidemic, but this I apprehend does not disturb my proposition.

The period of incubation in yellow fever, is a question which I cannot answer satisfactorily, but I believe ten days would be a fair average; in some cases I have known it to extend to a period of thirty days: in others two or three days and perhaps less time would be sufficient to develop the disease after the person had been exposed to the poison. The degree of resistance offered to yellow fever by the blacks in our county was truly marvelous; I do not think that a single negro died of the fever. They considered it so trifling that many never employed medical aid, and the indiscretions of which they were guilty, would to a certainty have resulted in death if committed by a white person. In children the poison seemed to overwhelm the nervous system, stamping the case with the signet of death as it were from the very beginning. My experience shows that women displayed a greater degree of resistance than men; whether this is to be ascribed to her temperate habits, or to that want of fear which is so characteristic of her when in real danger, I will leave the profession to decide, but if we admit that fear, and intemperate habits, have a tendency to lower the standard of health and render us an easier prey to disease, the problem is solved.

Prophylactics were worse than useless in yellow fever, the indiscriminate use of quinine and whisky especially. Persons who were continually taking medicines to prevent yellow fever, when they did contract the disease invariably proved bad cases.

Our population, before the epidemic in the fever stricken district, amounted to about nine thousand persons. The total number of cases about one thousand. Total deaths one hundred and ten.

I am unable to give you the classification required without communicating with the local physicians and the several "Howard" physicians who were employed to assist them, and the time which you allow me will not permit it.

I think that I can safely say that the actual loss to Harrison County by the epidemic amounted to fully twenty thousand

dollars. You will readily perceive that the estimate is not too great, when a single item is brought to your notice, viz: In the town of Handsboro, four saw mills, employing upwards of one hundred and twenty-five men, were stopped for nearly six weeks. The distress resulting from the stoppage of the mills was very great indeed; and when you add to that the suffering and sorrow of the sick and bereaved it will give you a fair idea of our condition at that time. May God spare us from such another visitation.

On the 15th day of December, 1878, Mr. B. B. Pearson, the County Superintendent of Public Education, returned to Handsboro; having left the place when the fever first made its appearance here, he concluded that after so much cold weather there could be no danger in returning; while having his home disinfected and thoroughly cleansed, (the negro woman left in charge having contracted the fever,) he sojourned at a friend's, where there had been nine cases of fever during the summer; he slept under the bedclothes used by the sick, and contracted a very bad case of yellow fever; as soon as he had recovered sufficiently, he brought his family home, after using every precaution, even allowing, at my suggestion, the house to remain open during freezing weather. In spite of this, his wife and sister-in-law, after using some of the same bed clothes used by Pearson while sick, were stricken down with yellow fever and fortunately recovered; the balance of a large family escaping. Now, believing as I do, that an intense degree of cold is the only agent that will destroy the germ of yellow fever, I should have been inclined to doubt the nature of the fever in these three cases; but similar cases were reported as having taken place in New Orleans, persons returning home from New York and Chicago, during the month of December and contracting the fever immediately on their arrival in New Orleans; although every precaution had been used to make their return perfectly safe.

In conclusion, I desire to lend my feeble voice to the enforcement of a rigid system of quarantine. It is the duty of the State to protect her citizens against pestilence of every kind, whether it come from abroad, or from her sister States. Such scenes as were witnessed in our own unfortunate State, in 1878, should never occur again. The penalty for any violation of the quarantine laws should be sufficiently great to inspire fear in the minds of those who would be disposed to do so.

The Epidemic in Pass Christian, 1878.

By Geo. N. Smith, M. D., President Harrison County Board of Health.

Pass Christian is five miles in length, stretching along the

beach of Mississippi Sound; its height above the level of the sea from eight to eighteen feet.

Yellow fever visited us in 1853, 1855, 1858, 1867, and 1878.

In 1878 there was no quarantine.

The first case of yellow fever occurred on the 29th of August, in the immediate neighborhood of the steamboat wharf, and supposed to be from fomites, as baggage, bedding etc., was being landed daily from New Orleans.

Two other cases on the 1st of September in the immediate neighborhood of the first case, within one hundred and fifty feet.

September 8th and 10th. Ten to fifteen cases also in the same neighborhood.

Local Condition—Free from malaria and up to the first case of yellow fever sanitary condition good.

Last case December 2d, 1878.

I attribute the cessation of yellow fever to cold weather.

The mortality not influenced by the temperature during the epidemic.

Incubation from three to fifteen days.

Consider yellow fever infectious, conveyed through the atmosphere only.

Negroes not so susceptible as the white race. The nearer they approach the white race the more susceptible they are. The mortality much less. I find no difference in sex. But children more liable than adults.

Do not know of any case where prophylactics were effective.

Households have escaped since 1853 where the lots were large, and a strict quarantine kept up, if not within the range of the wind from an infected quarter.

Heretofore the negroes escaped with few exceptions, and no deaths.

Population before epidemic 2500, during the epidemic about 5000.

Total number cases 204; deaths 22; males, adults, 7; females, adults, 6; balance children and negroes.

Previous to the 20th of August the entire place was disinfected, so far as carbolic acid and lime could do it. But do not consider disinfectants of much value.

Infected houses were thoroughly whitewashed, and carbolic acid used freely. Beds and bedding burned.

It is impossible to give an estimate of the losses incident to the epidemic—perhaps eight or ten thousand dollars.

The Epidemic in Tillatoba and Vicinity, 1878.

By T. H. Gordon, M. D.

Having been actively engaged professionally during the recent prevalence of the yellow fever in our midst, and having

had the best opportunities for studying the origin and peculiar features of this epidemic, it has seemed to me that I would fail in the discharge of a duty, did I not put on record the following statement of facts:

The face of the country generally is hilly, in some parts undulating, and in others very broken; along the water courses it is level. The whole is drained by the two Tillatoba creeks, one north of the station and the other south, being perhaps four miles apart. Height above the sea level three hundred and ninety-five feet.

Yellow fever was never known to exist in these parts until the latter part of the summer of 1878.

Tillatoba claimed to be quarantined at one time, but owing to the peculiar outbreak of the fever the quarantine was abandoned, which will be shown in the following paragraph.

The first case which came under my observation was that of a Mrs. C., who lay sick with fever perhaps three miles east of Tillatoba. In a portion of country heretofore regarded as being entirely healthy the only cause that I could see that could in any way affect the health was the drinking water. The peculiarity of the water is known throughout the neighborhood. The people who have lived there previous to to the year 1878 seemed to have enjoyed good health. I saw her August 26th, did not suspect yellow fever until she miscarried, which, as well as my recollection serves me, was on the night of the 28th. There was marked yellowness of the skin at this time. Dr. Bemis, our accomplished confrere and friend, met me on the 29th in consultation. She threw up some *black vomit* as we were leaving, continued to grow worse, and next morning, abour 10 o'clock, this being the 31st and five days from the time she was taken, she breathed her last. This case had in no way been exposed either to sick people, infected places or fomites. I think the fever originated at this place.

In the afternoon of the 31st of August Mr. C. was taken sick with the fever, he having been exposed nursing his wife. September 1st, no better; pulse 90; skin very hot; ordered him to be moved without delay, which was done. September 2d worse, pulse 91, intense pain in the head and back, and florid congestion of the capillaries of the eyes and skin, persistent nausea, pain not altogether severe in extremities. September 3d, no better; nausea uncontrollable. September 4, pulse not quite so frequent, skin unusually hot. Hiccough with black vomit. September 5. From this time he took a favorable turn; is at this time as stout a man as I know of.

These persons were noted for their disposition to remain at home. They had purchased nothing that could have contained fomites. They had been no where that the fever existed. I cannot think that malaria or unsanitary condition of the surroundings had any thing to do with the fever. If

north Mississippi had been picked I do not think the fever could have fallen on a more healthy locality.

Miss L. R., to whom I was called, after being sick several days, found that she had been suffering with the following symptoms: an intestinal cold stage, with pains in the back, limbs and head. The skin at this period was hot and dry, thirst extreme, tongue furred, nausea, with great epigastric tenderness, bowels are costive, a flush of the forehead with a fiery look of the eyes, mirthful delirum. The many other cases I will not mention, having taken the fever myself about this time. The last case occurred about the 15th of November and died during my recreating tour, which I regretted very much on account of her mother's having having been a nurse for my yellow fever patients. She, perhaps, taking it from the clothing that was carried home.

I attribute the cessation of the epidemic to the freezes and cold weather. The mortality of the fever seemed to be considerably augmented by a warm snap which occurred about the 10th of September.

Period of incubation seems to vary, some go ten, twenty, and others thirty days. I doubt its being contagious; if it is, it is limited by certain contingencies. Uniform high temperature is necessary to its production, existence and extension. No matter how it is generated, the fact is known that it does not exist anywhere in winter. Hence it follows, that if carried into a cold region from a hot one it will not diffuse itself. I could relate several cases that could not have been carried by means of conveyance, consequently I attribute it to an infected atmosphere.

Those who are most exposed, and that I regard as least liable, are very black negroes, especially old women. Those who suffer most from torpor of the bowels take it most readily. Next, persons in delicate health.

Prophylactics were not effective here. I know one family who lived only one-fourth of a mile from where the fever first made its appearance. They were not allowed to visit any of the sick. They almost all had the fever. I attribute this to the fact, if a fact it be, to one son who would go every day to the gate of the yards where the sick were to carry them nourishment. Others who did not go about the sick, nor those who visited them, escaped entirely. While the number of those exposed who took the fever were very few. It seemed to follow families and neighborhoods. The fever seemed to be of a more malignant type, and having made its appearance in a sparsely settled neighborhood, are about all the peculiarities worthy of mention.

The population of our station was between 80 and 100; out of this number 30 stayed, of which 11 were whites and 19 colored. Out of 6 whites that were exposed 4 had the fever, of

which myself and family were 3; five colored had the fever. The balance were in the country.

Number cases were as follows:

Males white	16	Deaths	2
Boys "	4	"	1
Ladies "	12	"	2
Girls "	3	"	1
" (col.)	3	"	0
Mulatto women	3	"	2

No sanitary measures were adopted before the epidemic.

Carbolic acid was used here as elsewhere until complained of by the patients, it being very offensive to most of them. In my opinion there has been a vast deal of harm done with disinfectants.

After the appearance of the disease I ordered the sick to be scattered as much as possible, which was done when circumstances would permit with the very best results; whenever they were moved from the infected places not a single case that was moved died. Houses, bedding, clothing and localities were kept as clean as possible.

The value of time lost by those sick	$ 1200 00
Cost of medical attendance	600 00
Cost of medicines	100 00
Cost of nursing	425 00
Cost of funerals	200 00
Cost of bedding, clothing, etc., destroyed	100 00
Loss of profits on expenditures abroad of refugees	300 00
Commercial losses	200 00
Total	$ 3,125 00

The Epidemic in Yazoo City, 1878.

By P. J. McCormick, M. D., a Member of the State Board of Health.

H. C. H., the first undoubted case, was taken October 8th. He visited a steamboat six miles above here on the Yazoo river on the first of the same month. The steamer was doubtless infected at the time. One of the hands died of well marked yellow fever on the 10th of the same month. The next two cases which occured here were taken on the 13th, residing immediately north, say seventy-five feet, of the residence of the first case. After this the disease spread, at intervals of three or four days, to different portions of the town, without peculiarlty as to direction. In no instance did a case occur that was not traceable directly or indirectly to the house of H. C. H.

Yellow fever visited this place before in 1853 and 1867.

Quarantine was established here on the 8th of August, and was not violated or evaded except in the case above referred to

The last case was taken on November 3rd. I do not know what to attribute the cessation of the disease to except to the thorough sanitary condition of the town and the small number of persons remaining here who were unacclimated.

The number of cases was very probably influenced by temperature. This, I think, is also true as to mortality.

Judging from the few cases we had here, the period of incubation would be from three to eight days.

I do regard yellow fever as contagious.

There is nothing that I have observed that would lead me to believe that yellow fever poison is conveyed by the winds.

The power of resistance to yellow fever is governed by the same principies which applies, all other things being equal, to all other diseases.

Prophylactics proper are useless.

The only peculiarities which characterized the fever of this year were protracted convalescence, and a greater number of recoveries after black vomit. There was also an amount of alarm which I never witnessed before, due in a great measure to the reprehensible practice of filling the newspapers of the day with descriptions of the disease. To this, I think, may be attributed many deaths.

The population of this town previous to the appearance of yellow fever, numbered twenty-five hundred, about thirteen hundred whites and twelve hundred blacks. During the existence of the disease, the population numbered six hundred, two hundred whites and four hundred blacks.

The total number of cases was twenty-three—fifteen females and eight males. There were seven deaths, five females and two males. These were all adults—both cases and deaths. There was only one black, a female adult, which resulted fatally.

When the disease made its appearance in neighboring cities, and long before a case occurred here, the author published a circular instructing the health authorities of this place as to the thorough disinfection and cleansing of the town. The circular was in substance that issued by the Secretary of the State Board of Health. The instructions which it contained were very rigidly, and, in most instances, intelligently carried out, which, in my opinion, explains why so few cases occurred here, and also the disappearance so early of the disease, for although nearly all the refugees had returned by the fifteenth of November, not a single case occurred after November 3d.

In regard to disinfectants, I have only to say that I believe

carbolic acid is worse than useless, and the use of all other so-called disinfectants might with advantage be very much diminished and reliance principally placed in a rigid quarantine, thorough cleansing and scavengering, and the use of earth closets. With the lights before us, if there is one thing that we can point to as more prolific than anything else in the propagation, if not the generation of the disease, it is the presence of large masses of human excrement.

The Yellow Fever at Mr. Y. F. Griffin's, Four Miles East of Summit.

By W. W. Moore, M. D.

On the 28th day of July, Mrs. Wilhoft with her three children and Mrs. Jewell, arrived from New Orleans and proceeded to her father's house on the same day. Her trunks arrived the day following and were taken there also, and were opened at such times during the week as Mrs. W. and her children needed articles contained in them, and were immediately closed again. August 5th, Mrs. Jewell returned to New Orleans, taking her trunk with her. Mrs. Wilhoft came into Summit the same day and remained at my house until Friday evening, August, 10th, when she was sent for by her brother-in-law, Mr. J. A. Jenkins; she visited her father's for her other two children and such clothing as would be needed on her visit. Her trunk was opened at this time and the contents taken out and spread about on the beds, etc., to enable her to select such as she desired more conveniently. The balance of the contents were left to be replaced in her trunks by Mrs. Griffin and her children. The next morning, Saturday, Alick, her second son, packed the things in her trunk, having to stoop over it for that purpose, and handling every article of clothing in it. Mrs. Griffin and the younger children were in the room during the time. Mr. G. and the eldest son, Young, being absent from the house.

On August 13th, three days after the packing, Alick was taken with a chill followed by high fever, with severe pains in head and back. August 14th, little Francis, the youngest child, was taken with chill, vomiting and pain in the head and back, with eyes swollen and very red; Mrs. G. was feeling unwell also during the entire day. About daylight Thursday morning little Mary was taken with the same symptoms; about noon the same day Whit, the third son, was taken down as the others had been, (without vomiting.) Mrs. Griffin had to retire to bed before sundown and early in the night had a chill, severe vomiting of bloody water, with pains in the head, back, etc.

About seven o'clock, Friday morning, August 16th, I saw the five sick of this afflicted family the first time. I left the house at ten o'clock, a. m., and soon after the eldest son, Young, was taken with the usual symptoms; this was the third day from the first case. On Sunday morning Mr. Griffin was taken as the rest of his family had been, with severe pains through hips and back, also burning pain in eyes, without headache.

On Tuesday, August 20th, Alick had black vomit once, and lived thirty-seven hours afterward.

It is my opinion that Mrs. Griffin and the children, who were in the room during the packing of the trunk, contracted the disease from that source, while Young must have taken it from Alick, as he and his father were not about the room or trunk. After Mrs. Griffin was taken down, Mr. Griffin being brought in direct contact with the disease, was taken down in three days afterward. That the deaths at Mr. Griffin's were from yellow fever, no one who saw them can doubt, and that the disease was brought there in the trunk spoken of, there is no room for a doubt. Mrs. Wilhoft's little boys having just recovered from the yellow fever when she left New Orleans.

The Epidemic at Valley Home, 1878.

By J. M. CALHOUN, M. D.

By request of my friend, Dr. Combs, of Garner, Miss., I will give you as exact a history as possible for me to do, of the yellow fever epidemic that occurred on the plantation of Dr. Geo. W. Payne, in the county of Tallahatchie, Miss., last fall. The Doctor lives in what is called the "valley country," twenty-seven miles west of Grenada, twelve miles north of Yalobusha river, and about twelve miles east of Tallahatchie river. The house is upon a hill, thirty or forty feet above the level of the valley lands below. To the north of it is a continuation of the ridge on which the house sits; east of it about one-fourth mile is a small stream running south, and emptying into a large creek, which is half-mile south of the house, running west into the swamp country; west of the house lies the plantation, west of which begins the swamp, interspersed with many bayous and lakes. The large creek frequently overflows its banks, depositing much sand, mud and other debris on the lands contiguous to it. The space between the house and this creek is open land, but not cultivated last year. Around the house are quite a number of forest trees, and in the yard several shade trees, yet open enough for free ventilation. In the valley below, and about two hundred yards off, stands a large steam gin. The yard

gradually slopes off to the valley, and is thoroughly drained. Cistern water is used, but the cistern was not cleansed properly last year, and water was frequently let into it during the summer rains. The house is a two-story, framed building, with two rooms about 14 x 16 feet above and below, a gallery in front and a hall between the rooms, and two shed rooms back of it. In the front yard is the Doctor's office; in the back yard are a kitchen, smoke-house, and one or two cabins occupied by servants, about six in number. Eighteen white people lived in the house—five adult males, eight adult females and five children. All, white and black, had the fever, and only four persons who spent a night in the house during the fever escaped having an attack of more or less severity. Those four were not in the house after the disease had reached its greatest severity. The attacks seemed to grow severer from the first to a certain period, extending over the space of six weeks, and then appeared to culminate and lessen in severity, ceasing after frost; but no one ventured into the infected district until after very cold weather had come. No yellow fever ever there before.

The nature of the disease was not suspected by Dr. Geo. Payne nor his brother, Dr. Joe Payne, and not until the fourth death had occurred did the people become aware of the true character of the fever. Malarial fevers prevail in that section of country more or less every year, some years with great malignancy, and quite a number of cases of malarial hæmaturia have occurred in that community.

The Doctor's place has not been a *very* unhealthy locality—not as much so as other places in the neighborhood, which were, in a measure, exempt last year from any very serious sickness. The usual amount of bilious fevers and chills and fevers did not occur last year. In fact, but for the epidemic at Dr. Payne's place, the health of the community would have been very good. I live twelve miles east of Dr. Payne, but on or near the same creek. In my practice there was a fewer number of bilious attacks than any year out of the twelve that I have lived here. There is nothing about the Doctor's place more than at others in the neighborhood to cause the fever, unless it be the cistern water and the large number of people living in the house. Other places seem more likely to *originate* a severe epidemic than his. Yet the fever was carried by persons who visited Dr. Payne's to other places in the neighborhood, where they died, but did not communicate the fever to other members of their families. No one took the fever unless exposed at Dr. Payne's house. There was the focus of infection. There the poison stayed, unless carried by some one who visited Dr. Payne's away from there. I repeat, though several visitors, who contracted the fever at the Doctor's, sickened and died in their own houses, yet none

of their families took the fever. Dr. Turnipseed had his wife placed on his bed by the side of him, and delivered her of a child whilst the fever was on him, of which he died in two or three days. He had waited upon the sick at Dr. Payne's.

Yellow fever is not, in my opinion, contagious. Exclude local causes and the fever will not be epidemic. What these local causes are I don't know. Who does? Yet we see the fever prevail fearfully at some places and in some years, and not at others. Some factor, as yet unknown, must exist at the one place and not at the others, to account for this difference. The poison does not seem to be conveyed by the winds. Persons and things seem to be the mode of conveyance. Mr. Montgomery, an inmate of the Doctor's house, was the first case of sickness. He was in Grenada about 3d August, stayed all night, slept in the "Walthall House," which is in the portion of Grenada first infected. He returned home on the 4th August. About the 12th was taken very sick, and treated by Dr. Payne for bilious fever; recovered in ten days. In about six days after Mr. Montgomery was taken, Mrs. Montgomery took sick, was very ill, but recovered. In a week after she was taken, one of her children was taken sick; then the other child sickened, and both died. Then Mrs. Blackburn, the Doctor's sister, an old lady who nursed the two children, took sick and died. Mr. and Mrs. Montgomery were moved down stairs into another room, and Mr. Thompson, wife and three children went up stairs into the room that Montgomery had left. In a week Mrs. T. took sick and died, then her little boy, then Mr. T. and the youngest child took sick. He died, the baby recovered. Their other child, a little girl, took sick about ten days after Mr. T. died and died also. Next, Mr. Graham Thompson took sick and died. He lived about a mile off at his store, came up at night to the Doctor's house to wait upon his brother, took sick in five or six days after exposure. Mrs. Groce was next taken sick and died. She had been there all the time; died on the 25th September, took sick 20th. Mrs. Wm. Payne, who had waited on the sick for fifteen days and nights, was the next case; was taken 23d September and died on 28th September. Mr. Murphy, Dr. Payne's son-in-law, was taken 25th September, and died 29th September. He lived one mile west from the Doctor's; had visited the family regularly up to the date of his illness. None of his family except himself visited Dr. Payne's, and none of them contracted the fever from him. Mr. Thompson's other child, the girl, four or five years old, was taken on 25th September and died on the sixth day of her illness. Mrs. Russell was the next case, then Dr. Payne himself; both died; then Miss Florida Payne, Mr. Geo. Payne, Jr., and Mrs. Payne were taken and recovered. Mr. Groce, a young man, who came in to see his mother, who lived in the

Doctor's family, was taken; he recovered. He was exposed two weeks or more before he took sick. The Doctor, Mrs. P., Miss Florida and Mr. George Payne, Jr., had all had a spell of sickness of some kind early in the sickness at the house, but had recovered so far as to be able to be up and to wait on the others. Their last spell was in October, between the 1st and 10th. Dr. Turnipseed began to visit the sick about 1st October, took sick about 15th, and died about 20th. The next case was one of the servants, a black man; he died. Then one after the other of the servants until all, six in number, had had the fever. All the blacks but one, mentioned above, recovered. Mr. Barry and family lived about two hundred yards from Dr. Payne's house, and had visited the Doctor's family during their sickness. Mr. Barry first contracted the fever, and then two of his children and a white man in his employ. Barry died; the other three recovered. His wife escaped. Several others who had visited the Doctor's family were sick at their own homes, but the cases were mild and they recovered. Mr. Montgomery was taken sick again about 15th October; was very ill; had a well-marked attack of the epidemic fever, but recovered. This was over two months from the date of his first attack. Did he have the fever both times? Several others of the Doctor's family, himself among the number, were sick in August, after Mr. Montgomery's first attack, yet had another spell in October, and two or three of this number died. One white man and a negro, who lived on another place joining Dr. Payne's, died in October, latter part of the month, but it is not at all certain they had the yellow fever, though they are enumerated among the number. Of the Doctor's family every member was sick; 18 were whites and 6 were blacks; 10 of the whites and 1 black man died. There were 36 cases of fever in all. Adult males, 18; females, 9; children, males, 5; females, 4. Twenty-nine of the sick were whites, seven were blacks. All the blacks exposed, save one, were sick. Total deaths, 17; adults, males, 10; females, 4; children, males, 2; females, 1; whites, 15; blacks, 2.

No sanitary measures used before the fever began. During the sickness the premises were cleaned up, bedding aired, clothes washed and fumigated, disinfectants used, water changed. But nothing checked the progress of the fever until fresh subjects were wanting and frost came. The greatest mortality was from 12th September to 15th October. The facts warrant the conclsion, I think, that the fever was not of local origin, but brought from Grenada by Mr. Montgomery. Yet, as I have stated above, some factor or factors existed at Dr. Payne's place that did not exist at other places in the neighborhood, to which persons sick with the fever went and died.

The period of incubation seemed to range from five days to

three weeks—that is, persons were exposed that time before taking the disease. Blacks resisted the disease better than the whites, females better than males, children better than adults. The females who recovered were delicate women. The males who died were healthy men, all but three young men. Habits seemed to make no difference. The temperate were as susceptible to the influence of the poison as the intemperate—the stout and robust as much so as the weak and infirm. Disinfectants did no good, nor can I attribute the escape of a single exposed individual to the use of prophylactics. On myself I used quinine daily, took sulphur and cream of tartar to regulate bowels and kidneys, avoided night air as much as possible, and escaped the fever. Night time seemed the worst time to contract the disease. The disease was more malignant in very warm weather. The last case occurred about the 1st of November, and was very mild.

Twenty-seven adults had the fever; sixty days to each person will cover time lost, which, at $1 per day, amounts to	$1,620 00
Cost of medical attendance, nurses, medicines, funerals, etc.	1,000 00
Local losses by interruption of business	1,000 00
Total	$3,620 00

I think this estimate is rather low.

I have now given you, my dear sir, as correct a history of this fearful epidemic as the data in my possession will allow, and if any fact of benefit can be elicited therefrom I will feel amply compensated for the time spent in writing it. There are mysteries about this fever that will have to be discovered before we can hope successfully to guard against it, or to combat it when it does come. Trusting we may all be spared another such visitation, and that recent and future investigations may shed more light on the subject, I remain, very truly, your obedient servant.

INLAND QUARANTINE.

The following memorandum was sent out to elicit information in regard to County Quarantines, during the epidemic of 1878. The replies are also published:

OFFICE MISSISSIPPI STATE BOARD OF HEALTH,
JACKSON, MISS., May 31, 1878.

DEAR SIR; We are anxious to embrace in our next report a statement of each County Quarantine that was established in our State during the epidemic of last year. We will deem it a favor if you will fill up the accompanying blank at your earliest convenience, and return to this office.

Very respectfully yours,
WIRT JOHNSTON, M. D.,
Secretary State Board of Health.

RFPORT OF THE QUARANTINE DURING THE EPIDEMIC OF 1878.

.....COUNTY MISS.,

1. If any railroads or navigable streams in your county, please name them. If not, please state the fact.

2. Name the towns situated on railroads or navigable streams.

3. State the extent of your exposure, the names of the places nearest your county where the yellow fever prevailed; their distance from you and the mode of communication with them.

3. Was your county quarantined during the epidemic of yellow fever?

5. State in a general manner the rules governing your quarantine.

6. Did your county entirely escape the disease?

7. If so, do you attribute its escape to the quarantine? If you do not, to what do you attribute it?

8. If part of your county escaped, and other parts did not, how do you account for the escape of part, and not all?

9. What was the cost of maintaining the quarantine?

10. What was the cost of other sanitary work?

11. What were the commercial and other losses in your county, due to the epidemic?

ADAMS COUNTY.

1. Mississippi river separates this county, (Adams,) from Louisiana. The Natchez, Jackson & Columbus Railroad passes through the centre of this county.

2. None. There are one or two post-offices on the river front.

3. Our Mississippi river front, ninety miles, was exposed continually. Steamboats and other water crafts were moving up and down the river with cases of yellow fever aboard. The nearest infected points, were the north eastern portion of Jefferson County, on the railroad, and Red River Landing, on the river.

4. Yes.

5. From the first, I adopted the "shot-gun policy." Neither steamboats or other water crafts were allowed to touch our shore without a special permit from me, and then only under the supervision of a quarantine guard. On the railroad trains I had guards to prevent passengers from infected or suspected localities coming in our midst.

6. It did.

7. Our escape is wholly attributable to the quarantine.

8. The entire county escaped. *Vigilance, activity, fearlessness* and *the double-barrel shot-gun* will give a community entire immunity from yellow fever.

9. The county quarantine cost 1,100 00

10. About $10 00.

11. No losses sustained, but the gain was incalculable.

T. S. SHARPE, M. D.,
County Health Officer.

LAFAYETTE COUNTY.

1. One railroad runs through the county, the Chicago, St. Louis & New Orleans.

2. Taylor's and Abbeville, on the railroad.

3. Water Valley, eighteen miles south of us; and Holly Springs, thirty miles north of us; both of these places are connected with this county by railway.

4. Yes.

5. The cars were not allowed to put off either baggage, freight, or passengers in this county. Our public roads were guarded, and no person was permitted to come into the county

unless he or they had certificates from a Health Officer, showing that they had not been exposed to yellow fever.

6. Yes.

7. Yes.

8. The entire county escaped.

9. The cost to the county was $1105 25; and the cost at Oxford, $910 00; it was quarantined some time before the county was.

10. Cannot tell.

11. I suppose between three and four thousand dollars.

J. T. CHANDLER.
President County Board of Health.

CARROLL COUNTY.

1. Mississippi Central Railroad passes through a small portion of our county. No navigable stream.

2. Vaiden.

3. Very much exposed from Grenada, 12 miles distant from our county, by persons leaving that place; also Winona, 4 miles from our county line, with which we had daily mail hacks.

4. Yes.

5. Our system of county quarantine was quite imperfect. Quarantine circulars were distributed and posted throughout all portions of the county, requesting all citizens to have no intercourse with infected districts; all articles of merchandise of every kind were forbid being brought into the county.

6. No.

7. We do most undoubtedly attribute the escape of the county at large to quarantine.

8. By the strict system of quarantine established in the neighborhood infected. The fever was carried by a party from Winona to the neighborhood. When fully developed a competent physician and nurses were sent into the neighborhood. No communication allowed for some time after fever disappeared.

9. The county was at no special cost.

10. About four hundred dollars.

11. As well as can be estimated, about fifteen per cent.

G. W. VASSER,
President County Board Health.

NOXUBEE COUNTY.

1. Mobile and Ohio Railroad running north and south through the entire county.

2. Macon, Brooksville, Shuqualak, situated on the Mobile and Ohio Railroad.

3. Meridian on the south, fifty miles by rail; Holly Springs on the north, over one hundred miles indirectly by rail; Jackson and other points in Tennessee, probably one hundred and fifty miles by Mobile and Ohio Railroad; Grenada, Canton, Lake and other points west, 100 miles and over.

4. Yes, strictly.

5 Quarantine guards were stationed on all the thoroughfares leading into the county to prevent the entrance of any person, goods or chattels, liable to convey the infection of yellow fever, from any and all infected points.

6. It did.

7. We certainly do.

9. Nine hundred and fifty-four dollars. This does not include the town of Macon, the county site, which had a town Board of Health and did all the sanitary work that cost anything

11. The losses in the county were indirect and would be hard to compute.

C. Y. THOMPSON, M. D.,
Sec. County Board of Health.

BENTON COUNTY.

1. The Mississippi Central runs through the northwest corner. No navigable rivers.

2. None.

3. Holly Springs the nearest point, distance 18 miles. A few cases occurred on the western border of the county, refugees from Holly Springs, and two cases at Michigan City, supposed to have contracted the fever on the road between there and Louisville, Ky.

4. No.

5. Ashland, county site of Benton, was quarantined against refugees from Holly Springs, about twenty days at a cost of about $100 00

6. Almost entirely.

7. Not to quarantine altogether, but to non-intercourse with infected places.

8. If we should speculate in regard to our escape from the fever we must attribute it to a great extent to non-intercourse (or self-quarantine) with infected places.

9. One hundred dollars.

10. Nothing.

11. The estimate cannot be correctly given, though it might be put at several thousand dollars.

FRANK FERRELL.
President County Board of Health.

AMITE COUNTY.

1. There is no railroad or navigable stream in this county.

2. Liberty is the county site. It is over twenty miles to any railroad town.

3. McComb City and Woodville, the first six miles from the county line, the latter fifteen miles; by visiting on horseback, buggies and other vehicles, chief amongst them the horse wagon.

4. We made an effort.

5. No one was allowed to visit the county from infected districts; no merchandise allowed to enter the county, groceries excepted, more especially whiskey. Persons wishing to leave the county were notified of the danger, and also of the fact that they would not be allowed to return. We had appointed an officer from each Supervisor's District whose duty it was to look after the trade, the egress and ingress, of his respective District.

6. Yes.

7. I attribute it to the fact that all communication with infected districts was stopped.

8. Be so kind as to frame your own answer to this interrogatory if you can arrive at any definite conclusion from the testimony before the Yellow Fever Commission.

9. Five officers at $30 00 per month each; about $200 00 as near as I recollect.

10. Nothing.

11. The merchants did not make their usual sales or profits; but it was just that much saved to the farmer and laborer.

T. J. JACKSON, M. D.
President Board of Health.

COVINGTON COUNTY.

1. No railroads or navigable streams in the county.

3. Owing to the distance of any railroad or navigable stream the extent of exposure was not great. Crystal Springs and Jackson were the nearest infected places, the latter place 70 miles and the former 35 miles.

4. It was.

5. Parties from infeeted districts were not permitted to enter the county; no goods or merchandise of any kind were allowed to be brought into the county.

6. It did.

7. I attribute its escape in part to the quarantine and partly from its remote situation from any railroad line or navigation stream or infected district.

9. Not more than $40 00.

10. Nothing.

11. The commercial and other losses were very slight.

ALEX FAIRLY, M. D.
President County Board of Health.

SCOTT COUNTY.

1. Vicksburg and Meridian Railroad.
2. Morton, Forest and Lake.
3. The extent of the exposure of our county to yellow fever or other epidemic depends in a great measure on the sanitary rules adopted by the proper officers against either end of the Vicksburg and Meridian Railroad, as it is the only chance or medium by which it can reach us.
4. Yes.
5. No person from an infected point or district was allowed to enter our county; no trains or cars, wagons, or any other mode of conveyance for goods were allowed to stop after entering our county except at Lake, where the yellow fever prevailed.
6. Except Lake.
8. It was carried to Lake by a man from Vicksburg, after which the balance of the county was quarantined against that point.
9. About one hundred dollars.
10. Nothing.
11. Am not posted, but would say that I think them small.

H. H. HOLBERT.
President Board of Supervisors.

LEAKE COUNTY.

1. There is no railroad or navigable stream in the county.
3. Sulphur Springs, Madison county, 2 miles from southwest portion of Leake county; the next nearest place was Canton, about 21 miles.
4. The whole county was not, but Carthage was.
5. All intercourse with infected places was prohibited and rigidly enforced.
6. It did.
7. I attribute the escape of Carthage to the quarantine, and the escape of the other portions of the county to non-intercourse with infected districts.

B. N. WARD, M. D.
President County Board of Health.

LINCOLN COUNTY.

1. Chicago St. Louis and New Orleans Railroad.
2. Brookhaven, Bogue Chitto and Montgomery.
3. Several trains run through the whole length of our county, 30 miles, every day to and from infected districts. McComb City, from our border 10 miles south; Port Gibson 25 miles west; Dry Grove 28 miles north.
4. About half the time.

5. It was ordered by the Board of Supervisors, that civil officers of the county should arrest persons coming from infected districts and cause them to return or punish them for misdemeanors. No arrest was ever made except at the depot.

6. Yes, except a few *very mild* cases after white frosts.

7. To the quarantine; because in former epidemics railroad men and persons from New Orleans stopped here with the fever, but it did not spread from them.

8. Because the population of our towns and the country around is not dense; or, in other words, I don't account for it at all.

9. Nothing.

10. Nothing.

11. None except to M. D.'s, druggists, and institutions of learning.

K. P. CLARK,
President Board of Supervisors,
Per J. W. Bennett, M. D.

HOLMES COUNTY.

1. Chicago, St. Louis & New Orleans Railroad partially. Yazoo river, Tchula Lake, navigable about six months in twelve.

2. Pickens Station, Goodman, Durant, West's Station, on the railroad. Marksville on Yazoo river; beside numerous landings. Tchula City, on Tchula Lake; beside numerous landings.

3. Exposure greatest at railroad towns and stations. Towns and landings along Yazoo river and Tchula Lake; nearest point fever prevailed, Canton; distance from Durant to Canton about thirty miles; about forty-five miles from county seat. Communication by railroad partially.

4. Yes.

5. Quarantine was established by Board of Supervisors and County Board of Health, each Supervisor and member Board of Health being vested with power to take such steps and adopt such measures as he might deem expedient.

6. No.

7. This county almost entirely escaped, (except as stated below,) which was due to the quarantine.

8. One or two cases of fever were brought into the county before establishment of quarantine; one or two other persons, (residents,) contracted the fever, but this was confined to one certain locality, and was prevented from spreading by strict quarantine.

9. About $1,500 00, aside from town quarantines.

11. None.

W. F. STANSBURY,
President Board of Surervisors.

MADISON COUNTY.

1. Chicago, St. Louis & New Orleans Railroad.
2. Madison Station, Calhoun Station and Way's Bluff, on the Chicago, St. Louis & New Orleans Railroad.
3. The nearest place to us which had the fever before we had, was Vicksburg, about fifty-five miles, without intercourse.
4. Not until the fever was among us.
5. All persons and goods from infected places, were forbidden entrance to the city, and the trains were not allowed to stop in the city limits.
6. No.
7. There was no quarantine till after the fever had infected the town.
8. Madison Station without any quarantine, and daily exposed to trains from New Orleans, with persons and goods deposited thereby, escaped the fever.
9. About $1,000 00, for two months, including sanitary work.
10. At least $30,000.

A. T. Semmes, M. D.,
President County Board of Health.

LEE COUNTY.

1. Mobile & Ohio Railroad. No navigable streams.
2. Baldwyn, Guntown, Satillo, Tupelo, Verona, Shannon, all on the railroad.
3. This county was not exposed to the fever; the nearest place where it prevailed was Holly Springs; one or two cases were reported at or near Okolona, thirteen miles from this place and five miles south of Lee County line.
4. Yes.
5. All persons from the infected districts were prohibited from entering the county, and such as were found in the county were ordered to leave, under penalty of fine and imprisonment in quarantine stations. The railroad and the different public highways leading into the county were guarded during the prevalence of the fever.
6. Yes, entirely.
7. I think our exemption was in part attributable to the rigidity of our quarantine, and partly to the excellent hygenic condition of the locality.
9. I do not know exactly, but very trifling.
10. We could not now state, but it amounted to very little.
11. I do not think the losses amounted to any thing, only a temporary suspension of business, which was amply made up afterward.

R. C. Cunningham,
President Board of Health.

NEWTON COUNTY.

1. Vicksburg & Meridian Railroad.
2. Chunky, Hickory, Newton, Lawrence and part of Lake.
3. Lake, Lawrence and Newton, twelve miles from our town; wagon road.
4. Yes.
5. Shot-gun.
6. No.
7. Our town escaped. I do not think yellow fever will spread here.
8. Our town escaped; none came here sick with the fever. We are in a high, healthy pine country; two cases of yellow fever seen in 1853, both came here from Newton, and died; no one took it from them. No precaution.
9. Nothing; all acted as police and staid at home; let no one come.
10. Nothing.
11. I suppose between $10,000 00 and $20,000 00; but loss of trade to merchant, advantage to farmer.

C. P. Partin,
President County Board of Health.

CHICKASAW COUNTY.

1. The Mobile & Ohio Railroad passes through the county. No navigable streams.
2 Okolona.
8. Grenada, forty miles; no public communication; Holly Springs fifty miles; no conveyance by public means; Meridian one hundred and thirty miles, on the same railroad.
4. Yes.
5. By an order of the Board of Supervisors, prohibiting any person from coming into the county from an infected locality; or buying goods, wares, merchandise, etc., from such locality. The Sheriff was empowered and instructed to carry out the provisions of the ordinance. The whole matter was ineffectual and insufficient.
6. No, not entirely.
7. Two unquestionable cases occurred in refugees in the county, and one or two other very questionable cases. Escaped because these were not a sufficient number of cases to infect a locality in which the hygienic conditions were not favorable to the spread of the disease; doubtless, more cases would have caused a spread of the disease.
8. The accidental cases occurred in different portions of the county.
9. In the county about $200 00; in the city of Okolona, about $300 00.
10. Trifling.

11. I am unable to estimate, though the losses direct, and indirect have been enormous, and will be felt in the county for years to come, even if we should have no recurrence of the disease.

J. S. CAIN,
President Board of Health.

YAZOO COUNTY.

1. Mississippi Central Railroad runs through the extreme eastern portion; Yazoo river runs through the western portion.
2. Vaughans on the railroad, Yazoo City, Satartia and Palmetto Home on the river.
3. Vicksburg and Canton, are the nearest places; Vicksburg, one hundred and ten miles by water, and sixty-five miles by land; Canton, about thirty-five miles by rail and stage. All of Warren County, that joins Yazoo County.
4. Yes.
5. I enclose you the orders of the Board of Supervisors.
6. No.
7. We attribute our partial escape to quarantine.
8. Yazoo City was the only place that had yellow fever; it was brought here on boat before quarantine was so strict; owing to the good sanitary measures it did not spread much; other portions of the county escaped by strict quarantine.
9. County about $3,000 00; city about $7,000 00.
10. The above figures include all cost.
11. It is impossible to ascertain what the losses are; it completely stopped all commercial intercourse and closed the stores for three months.

GEO. M. POWELL,
Chancery Clerk and *Ex-Officio* Clerk of the Board of Supervisors.

OKTIBBEHA COUNTY.

1. Branch road from the Mobile & Ohio, thirteen miles, called the Starkville branch.
2. Starkville, on the railroad.
3. I presume Canton is the nearest point where yellow fever prevailed; Jackson is one hundred and twenty miles from this point; we are exposed here from Mobile, distance two hundred and forty miles.
4. Yes, partially.
5. The Board of Health declared quarantine, but the Board of Supervisors failed to sustain us; however, we issued circulars, declaring that we were quarantined, and prohibiting persons stopping in the county, who had been exposed to

yellow fever; our town was strictly quarantined for two months.

6. Yes.

7. Not to the quarantine, but to our isolated situation.

9. Don't know.

11. Commerce was entirely suspended, but hard to estimate the amount of damage.

W. N. AMES.

LAUDERDALE COUNTY.

1. No navigable streams in the county. Four railroads pass through it; three terminating at Meridian, the county seat.

2. Meridian, Marion, Lockhart, Lauderdale, Toomsuba: Mobile & Ohio Railroad, Vicksburg & Meridian, Alabama Central, Alabama Great Southern; the three last terminate here at Meridian.

3. New Orleans, two hundred and ninety-five miles, Mobile, Alabama, one hundred and thirty-five; Vicksburg, one hundred and forty; Memphis, Tennessee, two hundred and eighty-six; Grenada two hundred and five; Chattanooga, Tennessee, two hundred and ninety-six; Lake, forty; and some few other points; all by railroad communication.

4. It was.

5. By the city Board of Health at Meridian, and by the county Board of Health, with special sanitary police officers under their control and sanction, both in city and county; also on all railroads and county roads passing through it or coming directly to this place. All these roads quarantined outside of city limits; part of the time county limits, except Mobile & Ohio Railroad, Vicksburg & Meridian; they to pass through without stopping; also by volunteer patrol.

6. It did not.

7. Meridian, the county site, suffered severely, though the disease was late in reaching here; to a too lenient system of quarantine, through humanity's sake, by permitting through transportation of passengers and baggage from Vicksburg; this being almost their only outlet at the time; all other routes being closed against them; and by undertaking to supply Lake, by railroad communication, with physicians, nurses, medicines, provisions, etc. The balance of the county escaped, except perhaps one or two cases at Lauderdale, by a generous system of local quarantine; on the part of the people themselves, by isolation.

8. Under this question, I will state that Meridian contains a population of about four thousand inhabitants. That as President of the city Board of Health also, and being familiar with this disease, watched it with fear and trembling, every step of its insidious approach, and thus gave timely warning

to my people, so trustingly confiding in me, of its appearance here; so that they had time to get away in time to escape its infection. Many of our people had been leaving the city from time to time, but from the 25th of September, (the first day I saw a pronounced case beyond doubt,) to the 1st of October, a general exodus took place, without the manner of leaving; leaving only a population of about four hundred or six hundred people behind; three-fourths of them being negroes. All thus leaving, I am happy to state, escaped the disease *entirely*, nor did they *communicate* the disease to others. The country surrounding the town was unusually healthy.

9. About $1,000 00; no medical officers being paid for any services.

10. About $800 00.

11. Three hundred thousand dollars. By diversion of about from five to seven thousand bales of cotton to other points; loss of trade from September to 15th of Novemper, by depreciation of the value of cotton and goods on hand.

GEO. E. REDWOOD, M. D.,
President County Board of Health,

TIPPAH COUNTY.

1. Ripley, Ship Island & Kentucky Railroad; a branch road; twenty-eight miles to Memphis & Charleston Railroad.

2. Falkner, Hopkins Station and Walnut.

3. Lagrange, 30 miles, railroad; Junction, 30 miles, railroad; Michigan City, railroad; Holly Springs, railroad.

4. No.

5. Ripley is the only town of any size. It was quarantined early and rigidly; two or three persons were sent out, who afterwards had fever.

6. Yes.

7. Not of the county, except by refugees being prevented coming from Holly Springs, east.

8. All escaped, and it is attributable to a rigid quarantine of Ripley.

9. In the town of Ripley $150 or $200.

10. Nominal.

11. Losses light.

W. L. CARTER, M. D.

GRENADA COUNTY.

1. Mississippi & Tennessee Railroad; Chicago, St. Louis & New Orleans Railroad; Yalobusha river, navigable only in winter.

2. Hardy Station, Grenada, Elliot Station. No towns on the river.

3. Exposed on all sides. Garner Station, on the Mississippi & Tennessee Railroad, Holly Springs on the north, Duck Hill on the south, on the Chicago, St. Louis and New Orleans Railroad; Garner three miles, Holly Springs sixty-eight miles, Duck Hill about seven miles from county line.

4. No.

6. No.

8. There was no communication with those parts that escaped.

10. Five thousand dollars throughout the county.

11. One hundred thousand dollars is the very lowest estimate.

H. J. RAY, M. D.,
President County Board of Health.

COAHOMA COUNTY.

1. Mobile & Northwestern Railroad, from Glendale to Jonestown, eighteen miles; Yazoo Pass and Sunflower river; in the spring navigable.

2. Jonestown on railroad, Clarksdale on river.

3. From Memphis, by the steamboats; Memphis is situated ninety miles north of Friar's Point.

4. Partially.

5. At Friar's Point, instructions by Board of Health not to permit any one to enter the town until they had passed twenty days in quarantine; officers of steamboats were ordered not to come ashore, nor citizens of the town were permitted to go about the boat, but those orders were only partially carried out, as results showed.

6. No.

7. Quarantine was not commenced sufficiently early.

8. By local quarantine, and the citizens keeping away from those attacked. We did not have yellow fever outside of Friar's Point, except on Oak Ridge, eight miles south of Friar's Point, in Judge Ruck's family; they were exposed before they refugeed to the county. The other cases were in northern part of county.

9. Probably $500 00.

10. From five hundred to one thousand dollars.

11. Can't say; don't think we sustained much loss, as the forced economy would more than compensate the loss.

J. A. COOPER, M. D.

MARION COUNTY.

1. No railroads; Pearl river is navigable nine months in the year, and runs through the county.

2. Columbia is the only town in the county, and is on Pearl river.

3. The nearest point of exposure was McComb City, distant forty miles; communication mainly by wagons hauling merchandise.

5. We first quarantined against goods from infected cities and towns, then as people came in on us, fleeing from yellow fever, we quarantined against persons.

6. Yes.

7. The Board of Health thinks without the quarantine we would have had yellow fever.

9. Less than four hundred dollars.

11. Perhaps $1000 00.

T. B. FORD,
President County Board Health.

WINSTON COUNTY.

1. None.

2. Macon, Mobile & Ohio Railroad, Kosciusko, Branch Railroad, are the nearest.

3. Lake Station, 60 miles.

4. No.

5. None.

6. Yes.

7. I attribute our escape to the adjoining counties being quarantined.

9. None.

10. None.

11. None.

A. L. KIRK, M. D.

CLAIBORNE COUNTY.

1. There is only one railroad in the county of Claiborne, seven miles long from Port Gibson to the Mississippi river.

3. The yellow fever was introduced into Port Gibson by a railroad employee, August Samuelson, who contracted the disease from the crew of the steamer John D. Porter. Samuelson was attacked eleven days after exposure in Port Gibson, and died August 8th.

4. It was, but not till after a number of persons had been infected by exposure.

5. The quarantine was rigidly enforced for a few days in Port Gibson, till it become evident that it was useless. Afterwards the country kept up a quarantine against the town, but it was imperfectly done, as it was impossible to keep the negroes from coming to town at night.

6. We had a great many cases in different parts of the county.

8. Every plantation which kept up a strict quarantine es-

caped the disease, while every plantation which was exposed to the infection suffered in consequence. There was no difference of opinion as to the preventive power of quarantine, neither among physicians, nor among the people. Its value was demonstrated, both positively and negatively.

9. About $1000 in money was expended by the county treasury. It would be difficult to estimate the cost to individuals for loss of time and police duty—more than ten times the above mentioned sum.

11. Perhaps $250,000, estimating value of lives lost, as well as commercial and agricultural losses.

R. G. WHARTON, M. D.,
President of Claiborne County Board of Health.

LEFLORE COUNTY.

1. Yazoo, Tallahatchie and Yallobusha rivers.

2. Greenwood, Shellmound, Sidon, Minter City, and Shepperdtown on the river.

3. Near Carrollton, 24 miles off; Grenada, 36 miles; Winona, 32; near Tchula City, 30; no exposure only from parties coming from these places.

4. Yes.

5. All roads leading to this place were guarded. Guards were instructed to let no one pass without a proper certificate showing that they had not been exposed to the epidemic. Boats were prohibited from entering this county from about the 15th of August to the 27th of October.

6. Yes.

7. I attribute it *entirely* to the *quarantine*.

9. About four or four hundred and fifty dollars.

10. This expense was maintained by private enterprise and I do not know how much it was.

11. I don't think the commercial or farming interest suffered any at all in this county on this account.

M. G. DAVIS, M. D.,
President County Board of Health.

ALCORN COUNTY.

1. Memphis and Charleston and Mobile & Ohio Railroads No navigable streams.

2. But one on the Memphis & Charleston Railroad, Corinth. Two on the Mobile & Ohio Railroad, Corinth and Rienzi.

3. Nearest point, Grand Junction, Tenn.; distance forty miles. Communication by Memphis & Charleston Railroad. Also Decatur, Ala., distance sixty miles.

4. No.

5. Our county was not quarantined from the fact there was no yellow fever on the Mobile & Ohio Railroad, and but one station on the Memphis & Charleston, and that was Corinth. Our town, Corinth, was rigidly quarantined from August the 13th against all persons, baggage, freight or newspapers, coming from an infected district. It was suggested and modified by the County Board of Health, and executed by the municipal authorities.

6. Yes.

7. It is universally attributed to the rigid quarantine. We were exceedingly particular. About the 1st of September invalids began traveling on the Memphis & Charleston Railroad; they, the invalids, began to stop off at Iuka, so we immediately quarantined against all persons who had entered the coaches on the Memphis and Charleston Railroad, and also all persons from Iuka. From our first quarantine we never allowed freight or passenger trains to stop in the corporate limits; had police at each train to keep persons and freight from being put off.

9. About three hundred and fifty dollars.

We had the fever on both sides of us on the Memphis & Charleston Railroad.

Our county was ready to quarantine, if necessary, in two hours, at any time. The citizens were so much alarmed that each one quarantined his own premises against all strangers.

JAMES D. BECK,
President Alcorn County Board of Health.

SUMNER COUNTY.

1. None.

2. None.

3. Grenada and Winona, each about fifteen miles from county line; communication by mail.

4. No.

6. Yes.

7. In not being thrown in contact with the fever.

A. H. BAYS, M. D.,
President Board of Health.

ISSAQUENA COUNTY.

1. Mississippi river.

2. Mayersville and Skipwith.

3. We were situated between Greenville and Vicksburg, and in communication with both places, both by river and telegraph.

4. Yes.

5. It was quarantined by placing guards at the landings on

the river and at or near the terminus of the public roads, near the county line.

6. No, it did not.

7. It was conveyed by smuggling in goods at or near Shiloh Landing, in this county. Only two or three died of it. It is suggested by some of the doctors that this was not yellow fever at Shiloh, but bilious fever of some kind, as no one else in the family had it, notwithstanding outsiders nursed it.

8. By strict quarantine.

9. $700 00 or $800 00.

10. Very little.

11. Several thousand dollars. I cannot make any definite estimate.

MARSHALL R. SMITH,
Deputy Chancery and Circuit Clerk.

CLARK COUNTY.

1. Mobile & Ohio Railroad runs through the whole extent of our county, from north to south.

2. Within our county are the towns of Enterprise, Quitman, DeSoto and Shubuta.

3. We were exposed by railroad communication with Meridian, it being the nearest point at which yellow fever prevailed; distance twenty-five miles.

4. Yes.

5. Guards were kept at railroad depots, with strict orders to let none pass from infected places; also, on all other highways leading into our towns.

6. Yes.

7. We are inclined to think our exemption was the result of rigid quarantine, as no topographical conditions would have been more likely to have saved us than other places that suffered.

8. No part of our county was visited by fever.

9. Probably not more than two hundred or three hundred dollars.

10. Nothing.

11. Cannot say, though not a great deal.

W. E. JONES, M. D.,
President Board of Health.

JASPER COUNTY.

1. We have no railroad in or passing through the county.

3. Our county was not exposed directly at any time during the yellow fever season, though indirectly by way of Meridian and Lake, both being situated more than twenty miles off. We have no communication with Lake except by mail, carried

by horse, nor with Meridian excepting indirectly by rail from Enterprise, a station on same road. The latter place is the shipping and receiving point for many of our people.

4. It was.

5. We stationed quarantine guards out on the several public roads leading in the direction of our little towns mostly exposed from the places where the fever was prevailing. We made it the duty of the guard to take up and report all parties passing into the county from the direction of Meridian, Enterprise and Lake Station to the nearest quarantine officer, or sheriff of the county, whom we made chief officer of the guard, whose duty it was to take charge of all persons and property found in their possession, collect fines and execute all orders, by the aid of the guards, requested of him by the Board of Health of the county. We did not permit any one to pass to nor from any suspected place without the consent of the nearest quarantine officer.

6. It did.

7. I do attribute our escape to the strict quarantine kept up at the several railroad stations on Mobile & Ohio Railroad and Meridian & Selma Railroad, as ours was not nor could not have been made effective without a vast amount of cost to the county. I am satisfied it would have prevailed in any of our little county towns had it been brought here.

9. Not more than $50 00.

11. There were no commercial losses, nor any other loss that I have learned.

W. J. Bailey,
President County Board of Health.

PONTOTOC COUNTY.

1. There are none.

2. None.

3. Water Valley, about fifty miles; Holly Springs, fifty-five miles, by dirt road.

4. Yes.

5. To suffer no one to enter the town and county from infected points, either in person or goods, except provisions.

6. It did.

7. I think that if it had not been quarantined probably we might have had some fever.

8. All alike.

9. Nothing—mostly by volunteers.

10. Nothing; each man bore his share.

11. I can't tell the commercial; the other very little.

J. F. Pitts.

WASHINGTON COUNTY.

1. County bounded on west by Mississippi river; Sunflower river flows through southwestern portion of the county; Deer Creek partially navigable.
2. Greenville and Leota.
3. Vicksburg, communication by steamboats; Grenada, communication difficult, and impossible the greater portion of the year; in summer can be reached by land.
4. Partially.
5. Quarantine stations were established about two miles from the towns, where all freights were detained two weeks and then delivered. The published rules were stringent enough, but they were not enforced with necessary rigidness.
6. No.
8. To the local quarantine regulations, viz: "shotgun quarantine."
9. About eight hundred dollars.
10. About fifteen hundred dollars. This only includes the appropriation made by Town Council and Board of Supervisors.
11. Estimated at one hundred and ninety thousand dollars.

J. S. WALKER,
President County Board of Health.

REPORTS FROM TOWNS.

The following memorandum was also sent out to elicit information in regard to the quarantine of towns during the epidemic of 1878, and the following replies have been received:

REPORT OF THE QUARANTINE DURING THE EPIDEMIC OF 1878.

AT....., COUNTY OF....., MISS.

1. Is your town situated on a railroad or navigable stream? If so, give the name of the railroad or stream. If not, state its distance from either.
2. State the names of the places nearest to your town where the yellow fever prevailed; their distance from you, and the mode of communication with them.
3. State the extent of your exposure.
4. Was your town quarantined during the epidemic?

5. State in a general manner the rules governing your quarantine.

6. Did your town escape the disease?

7. If so, do you attribute its escape to the quarantine? If not, to what do you attribute it?

8. What was the cost of maintaining the quarantine?

9. What was the cost of other sanitary work?

10. What were the commercial and other losses to your town, due to the epidemic?

Macon, Noxubee County.

1. On a railroad; Mobile & Ohio.

2. Grenada, Lake and Meridian; —— miles to Grenada, sixty miles to Meridian. Wagon roads to Grenada; railroad to Meridian and Lake.

3. We were liable to contract the fever from travelers on railroad and by wagon roads, from tramps, from numerous refugees from the West, and from merchandise from infected districts.

4. Yes.

5. Quarantining at first against parties from infected districts, and against certain classes of goods from such districts, our regulations were finally made so stringent as to forbid the stoppage, within our corporate limits, of all railroad trains and of all individuals, not citizens of the vicinity, who did not produce the most indubitable evidence of freedom from infection.

6. Yes.

7. Yes! most emphatically, yes!

8. $670 50 gross; fines for violations of quarantine regulations, $14 00; sale of tents bought for quarantine station, $90 00; amount out, $440 58.

9. All costs included in No. 8.

H. A. Minor, M. D.,
President Board of Health.

Fayette, Jefferson County.

1. On Natchez, Jackson & Columbus Railroad; 16 miles by dirt road from Mississippi River and 26 by rail to river.

2. Port Gibson, twenty-two miles by dirt road. Fever prevailed in the rural districts of Claiborne county, much nearer, twelve to fourteen miles.

3. Exposure to Port Gibson and Claiborne county alone from refugees and persons traveling. Same exposure from the river, with addition of goods from infected places. This county largely protected by county quarantine.

4. Yes.

5. Extremely rigid. No person admitted save from neighboring county, *known to be healthy*. No dry goods or other textile material admitted except from Natchez, known to be healthy. Groceries and provisions from St. Louis and other northern cities admitted after undergoing fifteen to twenty days quarantine. Mails, except third class matter, admitted from all points except for a period of about two weeks of epidemic period. Mail agents quarantined.

6. Yes.

7. Escape certainly due to quarantine. But for quarantine the fever would have been introduced through merchandise, if not by persons from river, railroad, or infected localities.

8. Six hundred and twenty-seven dollars.

9. Not computed, but certainly less than one hundred dollars.

10. None whatever.

N. L. Guice, M. D.

Columbus, Lowndes County.

1. Both. Mobile & Ohio Railroad; Tombigbee river.

2. Meridian, 109 miles.

3. Chances of travel of our own citizens, and that of refugees from infected places.

4. Yes.

5. See rules enclosed; with finally, a strict guard to arrest all parties, goods etc., from infected localities only.

6. It did, except one modified case.

7. Measurably to quarantine, and a pretty clean condition and a naturally salubrious locality. Quarantine was early enforced, and the fact published, thereby keeping many from trying to come here.

8. Nine hundred and seventy-five dollars and forty-five cents.

9. Estimated at $240 00.

10. Cannot be estimated; all trade was stopped even from the adjacent country, especially diverting cotton to points in Alabama.

B. A. Vaughan, M. D.,
President City Board of Health.

Kosciusko, Attala County.

1. Kosciusko Branch Railroad, connecting with the main line at Durant, Holmes county.

2. Winona, Canton and Sulphur Springs, Madison county, connected by rail and land travel.

3. About forty miles from Canton, the same distance from Winona; twenty-five miles from Sulphur Springs.

4. Yes.

5. Quarantine was established by the Board of Aldermen. Guards were stationed upon the railroad and principal dirt roads; no one, nor goods, were allowed to enter that came from an infected point, or passed through an infected place.

6. Yes.

7. Most assuredly I do; I have no doubt about it.

8. About four hundred dollars.

9. Fifty dollars.

10. *Not one cent.* Farmers were kept away from town, and consequently, did not buy many goods, when if they had purchased as usual, the failure of crops would have been more disastrous. Consequently, I think the country and merchants were gainers by the quarantine. J. M. Lewis, M. D.,
President Attala County Board of Health.

Oxford, Lafayette County.

1. On Chicago, St. Louis & New Orleans Railroad.

2. Holly Springs, north, 26 miles; Grenada, south, about 40 miles; railroad and telegraph.

3. Our greatest exposure was from the trains passing from infected places, and stopping at our depot.

4. Yes.

5. We refused to let goods of all descriptions be received, and persons from any infected district to pass through or stop in or near our city.

6. Yes.

7. We are fully convinced that we escaped the epidemic through strict quarantine regulations.

8. About one thousand dollars.

9. This is included in answer to No. 8.

10. This is hard to estimate; it must have been several thousand dollars, as business was completely suspended, the citizens and surrounding country deprived for two months or more of the necessaries of life. M. D. Vance.

Crystal Springs, Copiah County.

1. On Chicago, St. Louis & New Orleans Railroad.

2. John Terry's, half mile from town limits; Cox place, four miles, and Dry Grove, thirteen miles; daily hack line to Dry Grove, to carry provisions and nurses.

3. Trains were permitted to stop at depot for mails and freight. No one allowed to go near the train except agent, who had had the fever. Physicians and nurses transferred to hack for Dry Grove.

4. Yes.

5. No admission within corporation to persons, goods, ware or merchandise of any description from infected places.

6. Yes.

7. We attribute our escape to quarantine and the reduction of our population by citizens taking refuge in the country.

8. Cost of quarantine, for pay of guards, disinfectants and labor, $335 00; volunteer services to three times this amount were rendered by the citizens.

10. Sustained no actual loss, on account of the subsidence of the disease earlier here than in neighboring cities.

F. L. FULGHAM, M. D.

WOODVILLE, WILKINSON COUNTY.

1. Is terminus of West Feliciana Railroad, running from Woodville to Mississippi river, on Bayou Torre, La.

2. Baton Rouge, on the south; communication by river and rail, say sixty miles.

3. Only through railroad, as above stated, except the Mississippi river flowing past our western boundary.

4. Yes.

5. Our quarantine, as near as possible, amounted to absolute non-intercourse; no traveling allowed, and no goods allowed to be introduced until after thorough disinfection.

6. The doctors differ; there were some forty cases of mild sickness and three deaths.

7. If we escaped, it was likely due to quarantine; about half our doctors say we had yellow fever; the other half deny it. Our town was thoroughly cleansed and disinfected also.

8. The whole cost of quarantine and sanitary work was probably not over $700 00.

10. Very large; estimated at $50,000.

H. S. VAN EATON, Mayor *pro tem.*

CONCORDIA, BOLIVAR COUNTY.

1. Immediately on Mississippi river, 190 miles below Memphis.

2. Terrene, 12 miles; Greenville, 90 miles, per river; Memphis, 190 miles.

3. By steamers from Memphis, in early part of season; by direct contact with the disease by several of our citizens in Terrene; two of our physicians visiting patients there; one citizen, nursing friends at Terrene, returned with fever.

4. Yes, until boats stopped running, then removed.

5. Forbidding all persons, baggage, goods, ware or merchandise coming or being brought within corporate limits from infected districts, and all steamboats or other water crafts, private conveyances, etc., from landing or coming within corporate limits. This quarantine was not rigidly enforced, nor was it effective.

6. No.

7. Immediate exposure to infection. Had our quarantine been kept up and rigidly enforced the lives of several citizens would have been spared. They were allowed to go to and return from Terrene *ad libitum.*

8. Nothing.

9. About seventy-five dollars in cleansing and disinfectants.

10. I cannot form a correct estimate, though not by any means so great as we feared.

JNO. B. PEASE, M. D.,
President Board of Health.

SCOOBA, KEMPER COUNTY.

1. On Mobile & Ohio Railroad.

2. Meridian was the nearest point, forty miles south, on the Mobile & Ohio Railroad.

3. Communication by railroad and dirt road:

4. Yes.

5. No persons or goods of any kind were allowed to come within the corporation when they had been exposed to yellow fever, by being in or passing through any infected district.

6. Yes.

7. To the quarantine; but it would not have been effectual unless the trains of all descriptions had been stopped, as was the case.

8. Only the pay of an extra policeman.

10. Estimated at between five thousand and six thousand dollars.

H. WOODS, JR., Mayor.

BANNER, CALHOUN COUNTY.

1. Inland town; not situated on Railroad; no navigable stream: eighteen miles east of Water Valley.

2. Water Valley, eighteen miles west; wagons hauling cotton to market and returning with dry goods, bagging etc.

3. Exposed as above stated; by hauling dry goods, bagging, etc.

5. We issued an ordinance forbidding wagons and persons from bringing bagging and dry goods to our town.

6. Yes.

7. We think in all probabllity, if we had not have used the above precautionary measures, we would have had the disease.

8. Nothing.

J. A. HARTIN, M. D.,

COLD WATER, TATE COUNTY.

1. Mississippi & Tennessee Railroad.

2. Hernando, nine miles north; and Senatobia, six miles south; communication by railroad.
3. Very slight; because of quarantine.
4. Yes.
5. Non-intercourse with infected districts.
6. Yes.
7. To quarantine.
8. Four hundred dollars.
9. One hundred dollars.
10. All business was stopped for about six weeks.

J. D. TALBERT, M. D.,
Member Board of Health.

DURANT, HOLMES COUNTY.

1. Chicago, St. Louis & New Orleans Railroad.
2. Winona, Way's Bluff and western portion of this county; twenty miles from this place.
3. Very little.
4. Yes.
5. A quarantine post was established three miles south of us; no one allowed to leave the trains; no quarantine officer admitted into the corporation; guards posted in the corporation to allow no non-resident to stop here; no trains allowed to stop in the corporation.
6. Yes.
7. Entirely to the quarantine.
8. About $200 00.
9. About $200 00.
10. I think that commercial interests suffered a great deal; can't tell how much.

R. B. CARSON, M. D.,

MT. PLEASANT, MARSHALL COUNTY;

1. Rossville, Memphis & Charleston Railroad; distance seven miles.
2. Rossville, Colierville, Tennessee, eleven miles; Moscow, Tennessee, thirteen miles; Holly Springs, fifteen miles; none other than by private conveyance.
3. Two cases in our town; refugees from Holly Springs.
7. The town escaped; in our opinion, from the general healthfulness of the location and the refugeeing of its inhabitants.
10. Supposed to be between $500 00 and $1,000 00.

T. B. LUCK.

Hillsboro, Scott County.

1. Eight and a half miles north of Vicksburg & Meridian Railroad.
2. Three miles from Harpersville, horse mail; sixteen miles from Lake, horse mail to Forest.
4. It was.
5. All persons were denied the privilege of coming in or going out by blockade and guards.
6. It did.
7. To quarantine and location.
8. Nothing. Because every man was united and guarded, and charged nothing. R. Thompson.

Cornersville, Marshall County.

1. No. We are twenty-three miles from the Mississippi Central Railroad.
2. Holly Springs, twenty-three miles. Communication by private conveyance.
3. We were but little exposed, all communication between our town and the infected places having been suspended.
4. Yes.
5. All strangers and other persons known to have been in the infected districts were forbidden to enter within certain prescribed limits on a penalty of not less than five dollars nor more than fifty dollars fine.
6. It did.
7. We cannot say. Possibly if it had been brought here by any one we would have had it in our town.
8. Eight dollars.
9. Nothing.
10. There was a general stagnation of business, but we cannot conjecture the loss. N. Vernor, Mayor.

Wahalak, Kemper County.

1. On Mobile & Ohio Railroad.
2. Meridian, about fifty miles south of this place. Railroad.
3. Were exposed by travel on railroad, until the strict quarantine of Noxubee county was raised, which measurably stopped the trains on the road.
4. It was not.
5. No quarantine rules.
6. It did.
7. We think if we had not had a strict quarantine north and south of us on the railroad, we would in all probability have had it.
8. Nothing.
9. Nothing.

Howell Whitsill, J. P.

SARDIS, PANOLA COUNTY.

1. On Mississippi & Tennessee Railroad equidistant between Memphis and Grenada; fifty miles from either place.

2. Senatobia, thirteen miles north of us; Hernando, twenty-five miles north of us; Garner thirty-five miles south. One case, a refugee from Grenada, at Como, six miles north of us, who died. Daily communication with all these places by rail.

3. Trains running daily, at first, from Memphis and Grenada. Afterwards, and during the entire period of the epidemic, trains passed through daily from stations outside these cities, carrying physicians, nurses, and others who had been exposed to the fever.

4. Yes.

5. We quarantined against Grenada, New Orleans, and other points south on the day the fever was declared to exist in Grenada. This saved us, as we learned next day that the train would have brought us a number of refugees from that city, but for our prompt action. Two or three days afterwards, the fever having been declared epidemic in Memphis, we quarantined against that city and all other infected points. First, we permitted no trains to stop, but exchanged mails as the trains run slowly through. After a few days we permitted trains to stop at the depot, but did not permit passengers to land or mingle with citizens, nor any baggage or freight to be unloaded; except ice, medicines, disinfectants, and certain kinds of provisions. No one was allowed to come in contact with the men running the trains, except those whose duties required them to do so, such as depot agent, telegraph operator and mail carrier. Trains were stopped at designated points out of town and boarded by an officer who notified passengers of these regulations. On the 4th of September we quarantined against all mail matter except first class. On the 9th of September finding it impracticable to keep citizens away from trains when they stopped, we prohibited the stopping of trains inside the corporate limits, and established a station outside, where mails were exchanged and freights not prohibited, received and shipped. October 7th it was ordered that no goods or freights of any kind should be permitted to come in except drugs, and those only from points not infected, and to be unpacked outside of town and the packing burned.

When the fever broke out at Senatobia, thirteen miles distant, and was raging at Hernando, Holly Springs, Water Valley, and other towns around us, the roads leading into town were picketed to prevent persons coming in from infected places. A volunteer police force patrolled the town at night for the same purpose.

All quarantine regulations were abolished about the 11th of November.

6. Yes.

7. We attribute it altogether to quarantine, so far as any human agency was concerned.

8. It cost the town treasury about $200 00.

9. The town authorities spent about $300 00. The citizens spent perhaps $300, or $400 00.

10. Very little. It made trade very dull for two months, but losses were made up by increased activity after the epidemic.

W. D. HEFLIN,
Secretary Board of Health.

WEST POINT, CLAY COUNTY.

1. On the Mobile & Ohio Railroad.

2. Holly Springs, Grand Junction, Grenada, Lauderdale and Meridian; from sixty to one hundred and fifty miles; railroad communication with each.

3. Exposure was considered imminent, in consequence of travel, both by railroad and land travel, persons fleeing from the infected districts frequently passing through our town.

4. It was.

5. All persons from an infected district, or known or suspected of having been exposed in an infected town or city, were prohibited from stopping here, from entering the corporation limits within twenty days. Health certificates properly authenticated, required of all strangers, and the railroad conductors not allowed to take on, or put off passengers here without health certificates and special permit.

6. Yes.

7. I am confident that we would have had some cases of fever in our town had it not been for quarantine restrictions; (I mean imported cases;) one of which reached our suburbs, returned a distance in the country and died.

8. About $1,000 00.

9. Embraced in the above amount.

10. The losses to our town cannot be arrived at; business generally was suspended about two months; it is supposed, however, that the *actual* loss must have been at least $25,000 00.

J. E. MCEACHIN, M. D.,

MICHIGAN CITY, BENTON COUNTY.

1. Michigan City, is situated immediately on the Chicago, St. Louis & New Orleans Railroad.

2. Grand Junction, six miles north by railroad; LaGrange, Tennessee, five miles distant by public road; Holly Springs, twenty miles by railroad.

3. Michigan City encountered whatever exposure her location on the railroad involved; it is only twenty miles north of Holly Springs by railroad; persons from LaGrange and Grand Junction came to Michigan City in despite of efforts to prevent all communication with infected towns.

4. It was, imperfectly.

5. Quarantine officers were appointed and empowered to place pickets on the roads leading to the town. They discharged their duties as well as they could under the circumstances; they also watched the trains and prevented parties from stopping here.

6. There were but two cases here, and both fatal.

7. Most of the residents left. The two persons, T. M. and Edward Lane, who had the disease and died, were attacked late in the season, and the disease did not spread; how they contracted the disease is a mystery.

8. The cost was small in amount, and was paid by individual contribution.

9. No cost was incurred.

10. They were not great; this town was free from the epidemic till near the close of the epidemic, whilst the towns contiguous, were afflicted, and the trade was concentrated here to some extent as a consequence.

R. H. PARHAM.

HARRISON, TALLAHATCHIE COUNTY.

1. Situated on Mississippi & Tennessee Railroad, two and half miles south of Yokana river.

2. Dame station, on Mississippi & Tennessee railroad, ten miles south; and Valley Home, in the country ten miles west of railroad and eighteen miles south-west of this place.

3. The cars made daily trips from Grenada to Memphis and return, carrying mails, provisions and sick; and stopping at this place long enough to attend to necessary duties.

4. Inefficiently.

5. But few made, and none rigidly observed; there was an order that no supplies should be received at this place from infected districts, and that no travelers should get off or stop here. The town was partially policed; and disinfectants scattered promiscuously; such as lime, carbolic acid, tar, etc., etc.

6. We did.

7. I do not think that the quarantine did any good whatever; I know of no efficient cause that prevented the disease here.

8. Nothing.

9. No public expense; private individuals invested sparingly in disinfectants for private use.

10. I do not think any real loss was sustained; possibly the the stoppage of trade was a blessing in disguise.

GEO. W. RICE, Mayor.

SARTARTIA, YAZOO COUNTY.

1. Situated on the Yazoo river.
2. Vicksburg, forty miles; Yazoo City, twenty miles; Boltons' thirty miles; Canton forty miles; communication by water and land.
4. It was.
5. Rigid quarantine.
6. It did.
7. We attribute our escape to the quarantine.
8. Five hundred dollars.
9. Cost included in answer No. eight.
10. The trade was much restricted; but little loss from this effect.

L. W. TUTTLE, M. D.,

LOUISVILLE, WINSTON COUNTY.

1. From Macon, Brooksville, Starkville, on the Mobile & Ohio Railroad, 32 miles; from Kosciusko, on the Central Branch, 37 miles.
2. Meridian, 65 miles, by private conveyance, and by railroad via Macon; Winona, 55 miles through the interior, by railroad via Kosciusko.
3. Our location is recognized as one extraordinarily healthful; exposure to miasmatic causes less than ordinary; situated on an elevation, being well drained from all sides.
4. For a short time only.
5. Our rules were rigid during the time it was being enforced. Force employed was voluntary on the part of citizens.
6. Yes.
7. Partly to the quarantine, and mainly to location off of the railroad.
8. Maintained at no cost.
9. All sanitary work was performed by the citizens voluntarily.
10. Our commercial business was somewhat retarded, by not being able to get goods at the time; losses very light.

J. A. FOX, M. D.

WATERFORD, MARSHALL COUNTY.

1. Mississippi Central Railroad.
2. Holly Springs, nine miles distant; railroad and private communication.

3. One family of refugees, seven in number, from Holly Springs, two of which had the fever before coming, one case proving fatal. These refugees brought wearing and bed clothing with them. One physician, Dr. Hamilton, treated cases through the epidemic and made his home here. We had nine cases in the country near our town.

4. Two weeks.

5. Only prohibiting cars from stopping.

6. Yes.

7. No local cause; if not that, can't account for it.

8. Nothing.

9. Nothing.

10. No loss sustained.

J. P. Alvis, Mayor.

Quitman, Clarke County.

1. Situated on the Mobile & Ohio Railroad.

2. Meridian and Lake Station; distance about twenty-five and thirty miles, by railroad.

3. By rigid quarantine our exposure was rendered but slight.

4. Yes.

5. By placing guards at the different entrances to our town, we prohibited ingress to all persons suspected of coming from infected places.

6. It did.

7. We think our quarantine was our principal security against the introduction of fever.

8. Not exceeding two hundred dollars; mostly volunteer service.

9. Nothing.

10. But little, if anything.

W. E. Jones, M. D.

Forest, Scott County.

1. On Vicksburg & Meridian Railroad.

2. Lake, nine miles off; railroad and dirt road.

3. We quarantined as soon as the fever made its appearance there, and had no communication direct. We sent hand-cars with supplies and medicines near there every two or three days.

4. Yes.

5. We tried to enfore a very strict quarantine against all infected points, or such as were liable to become so.

6. Yes.

7. We attribute to our quarantine and removal of most of our citizens.
8. About five hundred dollars.
9. About fifty dollars for disinfectants.
10. From five thousand to seven thousand dollars.

WYATT WOOTEN.

BOONEVILLE, PRENTISS COUNTY.

1. Situated on the Mobile & Ohio Railroad, twenty miles south of Corinth.
2. Holly Springs, Grand Junction, Florence and Tuscumbia, Ala. Distances, sixty to sixty-five miles; railroad communication.
3. Owing to the timely and rigid caution of the managers of the Mobile & Ohio Railroad we were very little exposed.
4. We were.
5. We quarantined against all persons and things from infected districts, and made it the duty of our town marshal to meet every train, and allow no one to get off except those who held a certificate certifying that they had not at any time or in any way been exposed, etc. The depot agent was not allowed to receive any freight, baggage, etc., from infected districts, nor were box cars allowed to remain standing on the side track. All persons were also kept away from the depot.
6. Yes.
7. To the quarantine and rigid sanitary measures; our elevation and comparative immunity from malarial influences.
8. The cost was a mere trifle.
9. Insignificant; each person being compelled to keep his or her premises scrupulously clean and disinfected.
10. The commercial loss was considerable during the latter half of September and all of October. No other loss.

D. T. PRICE, M. D.

ARTESIA, LOWNDES COUNTY.

1. Mobile & Ohio Railroad.
2. Meridian, about ninety miles distant; connected with us by the Mobile & Ohio Railroad.
3. From Memphis, Tenn., on the north; to Meridian on the south, and the line of the Mississippi Central Railroad on the west.
4. It was.
5. No approach allowed, nearer than one mile from the corporate limits, unless a certificate of health could be shown from some Board of Health.
6. It did.

7. Our escape is attributed to the rigid quarantine above and below us at other points.
8. Nothing.
9. Nothing.
10. No means of ascertaining, though considerable.

A. D. WHITFIELD.

BROOKHAVEN, LINCOLN COUNTY.

1. Yes; On the Chicago, St. Louis & New Orleans Railroad.
2. At McComb City, twenty-two and one-half miles south, and at Dry Grove, thirty-six miles north; at Port Gibson, thirty-six miles west.
3. From four to six trains passed daily to and from infected points, but during three weeks no trains were permitted to stop here. A rigid shot-gun quarantine was enforced during ten days of the time.
4. Yes.
5. First, only passengers were forbidden from infected points; afterwards merchandise was forbidden. Indeed, for the last week before frost the quarantine was about as rigid as possible; very few showed any desire to evade it.
6. Yes.
7. We attribute our escape to the quarantine, because refugees desired to come. But if ever our town had any yellow fever it was in 1867, and then it failed to sustain itself, though it had freedom.
8. About twenty-five cents *per capitum;* population two thousand.
9. Embraced in the above.
10. Merchants sold more goods than were paid for, and the farmer staid at home and gathered his crops better than usual.

J. W. BENNET.

TOCCOPOLA, PONTOTOC COUNTY.

1. Twenty miles from Mississippi Central Railroad.
2. Water Valley, thirty miles, private conveyance.
3. Only by receiving goods and travelers passing.
5. It was quarantined the first of September; planted pickets; prohibited the receiving of goods or lodging travelers, and requiring the strictest cleanliness, and other duties required by the Board of Health.
6. Yes.
7. To neighboring towns and our own.
8. Nominal.
10. Only such as would accrue from stagnant trade.

A. C. WEBSTER, Mayor.

Cato, Rankin County.

1. Cato is fourteen miles south of the Vicksburg & Meridian Railroad, and twenty-five miles east of Chicago, St. Louis & New Orleans Railroad.
2. Jackson and Dry Grove, one twenty-five miles and the other about thirty miles.
3. Nearly all the produce of Smith and part of Covington and Simpson counties passes directly through this village. Refugees from infected districts would have taken refuge here, had they been permitted.
4. It was.
5. Notices or handbills were posted on all the roads leading to the village, forbidding any person from an infected district entering the limits of the corporation until they should give notice to the Mayor; penalty, arrest, heavy fine and notice to leave the corporation immediately.
6. It did.
7. We attribute it to the quarantine, as parties from the vicinity of infected districts did attempt to enter the corporation.
8. No money.
9. All the work was performed gratuitously by the citizens of the place.
10. Our business increased, owing to the quarantine at Jackson and other places.

C. R. Norman.

Beauregard, Copiah County.

1. Chicago, St. Louis & New Orleans Railroad.
2. Port Gibson, west forty-five miles, only private conveyance; McComb City south; Jackson, north; railroad.
3. Passengers and then baggage by railroad trains, train hands, etc., mail, etc.; as trains were not prevented stopping, daily papers, etc., from New Orleans by express; refugees and farmers with produce from Port Gibson and vicinity.
6. Yes.
7. Quarantine prevented any cases being brought here. The location of the town is such that I do not think it would have spread, as fevers of any kind are rare here; surrounded by yellow pine forests.
8. Very light; enforced by town officers; town not large and situated on high, rolling ground, easily kept clean, and consequently the work did not cost much.
9. Mosily done by volunteer work.
10. None, as trade came here early in the season which properly belonged to other places, but was turned to this point by yellow fever and local quarantines.

Frank McIntosh.

CRAWFORD, LOWNDES COUNTY.

1. It is situated on the Mobile & Ohio Railroad, 211 miles from Mobile.
2. Meridian and Holly Springs. The former about 75 miles distant by railway. The latter about 175 miles.
3. No refugees from infected districts except one family from Mobile before the quarantine was established in that city.
4. It was not.
6. It did.
7. I attribute it to the quarantine of other places.
10. General stagnation of business.

D. N. LAWRENCE.

ELLISVILLE, JONES COUNTY.

1. Forty miles from Shubuta, the nearest, and about the same from Waynesboro.
2. Lake, about 75 miles.
3. Transient travelers, goods, etc.
4. Yes, sir.
5. All persons were prohibited from coming in from infected parts, also from goods being brought in.
6. Yes.
7. Do not know what the people think as I have not been living here only this year. I think our escape was owing to the quarantine.
8. A mere trifle, almost nothing.
10. But very little.

DR. W. L. LEE,
Member County Board of Health.

MAYHEW, LOWNDES COUNTY.

1. Mayhew is situated on the Mobile and Ohio Railroad.
2. Meridian, ninety miles distant. Communication by rail.
4. General communication by rail.
5. The town was not quarantined but the county was, prohibition of all passengers and freight from all infected districts.
6. It did.
7. From the healthy location of town, and not coming in contact with cases of fever from other places.
8. Not knowing I could not say.
9. No other sanitary work known of.
10. Amount not estimated, but general stagnation of business.

H. D. THROWER, Justice of the Peace.

Morton, Scott County.

1. Our town is on the Vicksburg and Meridian Railroad; Vicksburg and Meridian.
2. We had the fever at Lake Station, twenty miles distant, and at Jackson, thirty-five miles.
3. Only to the railroad.
4. Yes.
5. We prohibited any freight from coming into our city, and would not allow any one to come in from an infected district; we allowed all to go out of town, but none to return.
6. Yes.
7. We attribute it to the quarantine and to our citizens all leaving town.
8. About seventy-five dollars.
9. None.
10. Business was paralyzed, and we had no commercial intercourse with any city.

D. P. Rawls.

Lexington, Holmes County.

1. Is not. Fourteen miles from Durant, on the Chicago St. Louis and New Orleans Railroad, and twelve miles from Tchula on Yazoo River.
2. Nearest place about nine miles northwest of this town in the country—next nearest at Winona, on said railroad, about 25 miles distant.
3. But little exposed, on account of strict quarantine.
4. Yes.
5. No persons from infected places allowed to stop in town, (permitted to pass through without stopping.) Certain kinds of goods not allowed to be brought within the limits of the town. Other kinds allowed to be brought in after inspection by Board of Health.
6. Yes.
7. Attribute its escape to the quarantine.
8. About six hundred dollars.
9. Nothing.
10. Our merchants sold about $10,000 00 less of goods, though they insist that it was no loss to them, or to the town or to the country, but rather a gain.

W. F. Cross, Mayor.

Greenwood, Leflore County.

1. On the Yazoo river.
2. Near Carrollton, Carroll county, 24 miles; Grenada, 35 miles; Winona, 32 miles; communication by dirt road.

3. Little or no exposure on account of strict quarantine, both river and country and public roads.

4. Yes, strictly.

5. Special guards were placed on all roads and rivers, allowing no one to pass without certificates from Boards of Health, and no one at all from the direction of infected districts. Steamboats were prohibited from landing in the county; penalty $250 00 for violations.

6. It did.

7. We most assuredly attribute our escape to quarantine, and nothing else.

8. About $400 00.

9. About $50 00.

10. We lost nothing; this, however, on account of short crops and credit, otherwise we would have been damaged.

M. G. Davis.

Friar's Point, Coahoma County.

1. Is situated one hundred miles south of Memphis, Tennessee, on the Mississippi river.

2. One case died in this county opposite Helena, eighty-five miles north of Friar's Point; with the exception of this case, Memphis was the nearest.

3. There was one case brought to the Point on the seventeenth of August, and died on the wharfboat; I think, however, that we had other exposure from the steamer Coahoma, a local packet, as on her last trip to this port, one of her pilots, Captain Cummings, was down with the disease, and died at Memphis.

4. Yes.

5. Our quarantine was established at the time that the first case of sickness was confined to the wharfboat; the system of quarantine was this: an officer was stationed on the wharf, with orders to permit none of the crew to come ashore, nor none of the citizens to go aboard; and strangers coming here from infected districts were quarantined for twenty days.

6. No.

8. Do not know; but very expensive, say $200 00; every citizen constituted themselves a police to aid in the work.

9. Probably $500 00.

10. I should think several thousand dollars.

S. A. Cooper, M. D.

New Albany, Union County.

1. Situated on Tallahatchie river.

2. Holly Springs, forty miles distant, overland,

3. Not liable to get here, unless from refugees, from infected districts.

5. It was.

6. The ordinance required guards to be stationed on every road leading into the town about a mile distant from the same, with orders to allow no one to pass from a distance, whether from infected districts, or not.

6. We did.

7. It would certainly have been brought here from Holly Springs, if we had not quarantined.

8. Three hundred dollars.

9. No other expenses of any amount,

S. HEARLE, Mayor.

BYHALIA, MARSHALL COUNTY.

1. Byhalia is fourteen miles from the Memphis & Charleston Railroad south; eighteen miles north-west of Central Railroad.

2. Collierville, on the Charleston railroad, fourteen miles; Holly Springs, on Central railroad, eighteen miles; communications private.

3. Very slight.

4. It was.

5. No one was permitted to remain in our town from infected districts; they were quarantined ten days; volunteer police.

7. One man died during the epidemic; the doctor said his disease was the same as at Collierville, Tennessee; he had been on the Central railroad cars; our escape was from quarantine.

8. It was volunteer.

9. It was done by each individual.

10. Owing to our escape from the epidemic, losses nothing.

P. T. RAIFORD.

CARROLLTON, CARROLL COUNTY.

1. Carrollton is thirteen miles from the Mississippi Central Railroad, and eighteen miles from Yazoo river.

2. Grenada, twenty-four miles north; Winona, thirteen miles east; and Morris' neighborhood, ten miles north-east.

3. Our greatest exposure was from Grenada; several of our citizens had been stopping in that place for several weeks; and only left on Friday before the disease was declared yellow fever on Sunday.

4. Yes.

5. Guards were kept on all public roads leading to our town day and night; no one allowed to pass without the certificate of a well known Health Officer; no goods, articles of trade, packages of any kind allowed to be brought in town; our mails were stopped.

6. Yes.

7. Three hundred and fifty dollars; much was done by private contribution.

9. One hundred and fifty dollars.

10. The best estimate we can make on this point, is a loss of fifteen per cent.

G. W. VASSER.

PICKENS, HOLMES COUNTY.

1. Chicago, St. Louis & New Orleans Railroad.

2. Way's Bluff, eleven miles south; Canton, twenty-one miles south; Winona, forty-five miles north; communication by railroad.

3. Trains passing through and stopping within the corporate limits; and refugees from adjacent cities where the fever prevailed.

4. Yes.

5. A quarantine station established half-mile from depot; no traveler allowed to stop; no cars allowed to stop in the corporation, unless specially allowed to bring and unload provisions; persons temporarily absent, allowed five days to return, etc., etc.

6. Yes.

7. I do

8. About $200 00.

9. Gratis.

10. Commercial interests were increased, on account of obtaining supplies, etc., and selling to inland towns that were out of such things; individual losses comparatively small.

T. W. WRIGHT, M. D.

POPE, TATE COUNTY.

1. Mississippi & Tennessee Railroad.

2. Courtland, one and one-half miles by railroad; one case, fatal; did not spread; Senatobia, thirty-eight miles; Garner, twenty miles, both by railroad; Memphis, sixty-six miles; Grenada, thirty-three miles.

3. The trains carrying the sick and dead between Grenada and Memphis, stopped in our town for wood and water, and our citizens invariably went to them; one of our citizens staid in Grenada one night when the fever first broke out.

4. No.

6. I treated three cases which I consider yellow fever, though I did not pronounce them so at the time; recovered.

7. I can give no reason satisfactory to myself, why we did not have the fever in its violence; I can only suppose the atmosphere not to have been in a proper condition to receive the poison.

9. We did none; save to scatter a few barrels of lime around the depot house.

10. I consider it a benefit, in this respect, as it stopped to a great extent so much credit trade, which is a curse to any community.

THOS. BRYAN, M. D.

CHESTER, CHOCTAW COUNTY.

1. Starkville, 28 miles, and Kosciusko, 33, are the nearest points on the railroad.

2. Winona and Grenada 40 and 60 miles respectively; communication by mail routes only.

4. It was for a short time.

5. The quarantine of this place was against goods and merchandise more than anything else. All persons from a distance were required to produce certificates that they were not from infected districts.

6. It did.

7. I don't believe any quarantine regulations were neccessary. I am unable to state what prevented the disease here, unless its being a high, dry, piney woods country was the cause.

8. About one dollar per day.

9. Nothing. Each man looked after his own premises.

10. Some temporary embarrassment about getting supplies for table use is about all the loss.

J. S. SMITH, Mayor.

LOVE'S STATION, DESOTO COUNTY.

1. On Mississippi and Tennessee Railroad, 27 miles south of Memphis.

2. Hernando, 5 miles north, and Senatobia, 12 miles south. Communication by railroad and dirt road.

3. Our exposure was considerable, owing to the proximity of the disease, but as little as could reasonably be expected.

4. It was.

5. We quarantined against all persons and merchandise from infected districts; against all strangers and persons suspected of visiting Hernando, our county site, and guarded the town at night to keep out stragglers.

6. It did.

7. To the quarantine; to the extreme caution of our citizens, and the mercy of God.

8. About ten dollars.

9. As each citizen furnished his own disinfectants I can't state exactly.

10. In the corporation the loss was fully one thousand dollars,

and in the immediate neighborhood, among men who do all their trading here, about three thousand more. We have no Board of Health at present. Will notify you with name of President as soon as we appoint.

J. Watson Woods, Mayor.

Austin, Tunica County.

1. The town is situated on the Mississippi river. The wharf in low water is about two miles from town.
2. Helena, about 14 miles by land, and 20 by river; by river communication; Friar's Point about 35 miles; by river.
3. Yes.
5. Enclosed I send you the rules of our quarantine. We finally adopted a rule that we would allow no communication whatever.

W. J. Nelson, M. D.,
Secretary Board of Health.

Kossuth, Alcorn County.

1. Nine miles southwest from Corinth; equidistant between the two railroads.
2. Holly Springs, 50 miles west, and Iuka 25 or 30 miles east. Rail from Corinth.
3. Some refugees came here from Collierville, Tenn., after the appearance of fever there, though escaped; some of them came in poor health, stayed until frost and went away well.
4. No.
6. Entirely.
7. High, dry, and generally very healthy village; no local cause for fever, free from malaria, etc.
9. Trifling.
10. We did not suffer much, if any, as our trade was probably increased, as many were afraid of railroad towns.

W. A. McAnulty,
Wm. F. Wallace.

Springdale, Lafayette County.

1. It is—on the Chicago, St. Louis & New Orleans Railroad.
2. Water Valley, distant five miles, and situated on the same railroad.
3. We were in no danger except from refugees and the passing trains.
4. It was not.
6. There was not a case in the county.
7. We had a county quarantine and we were not exposed to the disease.
8. I think our county paid out about $500 00 to maintain qaarantine.

C. C. Shipp, Mayor.

Carthage, Leake County.

1. Situated on Pearl. Only navigable as far up as Carthage, about 30 miles east of Canton.

2. Sharon, 25 miles; Sulphur Springs, 20 miles; both places in Madison county.

3. The exposure here consisted principally in bringing goods from infected districts in the early stage of the epidemic. It is the opinion of the writer that we had one well defined case of the fever here—a young man who visited Canton at an early period of the epidemic. He recovered.

4. It was.

5. Persons from infected districts were prohibited from entering until after some thirty days had elapsed after exposure. All goods in sacks or bagging, and all dry goods of any and every description prohibited. Groceries were quarantined some days and fumigated before being admitted.

6. It did, with the exception of one case.

7. This is a difficult question to answer. The writer feels safe in asserting, however, that notice of the quarantine prevented an influx of fugitives who might have introduced the disease.

8. Only $48 50.

9. No other expenses.

10. It is hard to say. Trade was at a dead stand-still for four months, causing a heavy loss to the merchants. The farming classes fared better, as the quarantine enforced a system of economy which they were not in the habit of practising, and their expenses were proportionally light.

J. L. Plunkett, M. D.

Martinsville, Copiah County.

1. Our little town is situated on the Chicago, St. Louis & New Orleans Railroad, thirty-eight miles south of Jackson, Mississippi.

2. The yellow fever prevailed at Jackson, Dry Grove and McComb City; which was from twenty to thirty-nine miles from this place; we only communicate with the above places by mail.

3. Our only exposure here was from the passing trains, which were allowed to stop here, but no one allowed to get off of any train.

4. Yes sir, we were strictly quarantined.

5. Our quarantine was in effect August 10th, 1878, and was raised on November 14th, 1878, and during said term, no person was allowed in the corporation from any yellow fever point and also all goods, except flour, meal, meat, lard, fish, salt fish, soap, concentrated lye, cotton ties, lime and all disinfectants.

6. Yes, all sir.

7. We attribute our escape to the quarantine and disinfectants.

8. We managed to quarantine ourselves; without cost.

9. The real cost was very small; would not exceed $10.

10. Our only loss was caused by the delay on the part of planters, who brought in their crop late, and by being late obtained low prices for their cotton.

JOSIAH HESTER, Mayor.

FULTON, ITAWAMBA COUNTY.

1. Is situated on the east side of the Tombigbee, not at present navigable, two and one-quarter miles, and nineteen miles east of the Mobile & Ohio Railroad.

2. Holly Springs and Grand Junction; one hundred and twenty miles to Holly Springs and about eighty or ninety miles to Grand Junction.

3. The people in this section not exposed; being an interior town, refugees taken to the railroad and did not come out this way.

4. Town and country quarantined, by order of the Board of Supervisors; persons prevented from coming into the county from any infected district or place; sanitary measures recommended by Dr. M. W. Howard; such as recommended by the State Board, and verbally carried out at no cost to the county.

6. It did.

7. Not to the quarantine; but our non-intercourse with yellow fever sufferers, as well as a high and dry locality, being one hundred feet above the level of the river.

8. Seventy-five or eighty dollars will cover the entire expenses of quarantine.

9. Nothing—individual enterprise.

10. General stagnation of business.

M. W. HOWARD, M. D.,
County Board of Health.

BENTON, YAZOO COUNTY.

1. Fifteen miles west of the Chicago, St. Louis & New Orleans Railroad; ten miles east of Yazoo City, on the Yazoo river.

2. Yazoo City, ten miles west, a daily stage line; Canton, twenty-two miles east, daily stage from Vaughan's station.

3. Not much exposed; in the earlier stages of the epidemic, by passengers on the stage; the detention was just sufficient for opening the mail; we received a daily letter and newspaper mail from New Orleans and all other places during the entire epidemic.

4. It was.

5. The quarantine was absolute in regard to every person except physicians, regardless of exposure; no one but the latter and stage drivers were permitted to enter or leave the village, and no merchandise of any kind (except drugs from north and west, and they were detained twenty days, opened and some of the packages fumigated,) was admitted; as stated above, letter and newspaper mail was received without detention during the whole period of the epidemic.

6. It did.

7. To the fact that our quarantine was absolute; as regards merchandise and persons entering or leaving our village.

8. No cost; for citizens voluntarily did guard duty.

9. The price of a barrel or two of cheap carbolic acid.

10. I do not know that the loss amounted to much; the business season was postponed, but as other towns around us had the disease prevailing, there was no ultimate loss to amount to anything, but business of all kinds, collections, etc., were suspended for the time.

HENRY YANDELL.

RAYMOND, HINDS COUNTY.

1. Raymond is eight miles south from Bolton and Clinton, on Vicksburg & Meridian Railroad.

2. Bolton; Dry Grove and McNair plantation; from six to ten miles from Raymond.

3. Our exposure was very great, on account of Vicksburg refugees, and from McNair's neighborhood.

4. Yes.

5. The first ordinance quarantined against infected places; afterward it was against the world.; volunteer guards watched the roads and kept out all persons.

6. Yes.

7. My opinion is, that we would certainly have had the epidemic, had it not been for the quarantine.

8. About $100 00 paid to marshal and night guards.

9. About $25 00.

10. Can't give any specific amount, but it was great.

C. M. WILLIAMSON.

ASHLAND, BENTON COUNTY.

1. About twelve miles from the Mississippi Central Railroad.

2. Holly Springs, distance eighteen miles; two deaths at Michigan City, within thirteen miles of us.

3. To refugees from Memphis, Tenn., and Holly Springs.

4. It was.

5 We quarantined by placing pickets on the roads; any one

violating laws were fined $10 00, for the first offense, and put out of town; and for the second offense, imprisonment.

6. It did.

7. To the quarantine.

8 About $100 00.

9. In the above.

JNO. H. MORGAN.

LAMAR, BENTON COUNTY.

1. Situated on the line of the Chicago, St. Louis & New Orleans Railroad.

2. Holly Springs, twelve and one-half miles; Hudsonville, six miles; Michigan City, six miles; Grand Junction, Tenn., twelve miles; all by railroad.

3. We had two imported cases of yellow fever, both made their appearance before quarantine regulations were established; prior to these regulations, persons from infected places were continually passing through and sleeping in our town.

4. It was.

5. We quarantined against freight of every description, and against persons coming from infected places, and these regulations were rigidly enforced; Health Officer's certificate as to non-infection was always required before anything or anybody could enter our town.

6. Yes, escaped as above.

7. We attribute it to quarantine, most certainly.

10. At least $10,000 00.

THOS. G. BREWER, M. D.,

SENATOBIA, TATE COUNTY.

1. Situated on Mississippi & Tennessee Railroad.

2. Hernando was the nearest infected place, and is accessible by Mississippi & Tennessee Railroad.

3. We were not exposed to any extent until Mr. C. W. Crager went to Grenada, and stopped some days in that place, returning by way of Holly Springs, bringing the remnant of a family that had died of yellow fever with him, himself being infected, and had it and died in our midst.

4. Yes, but poorly.

5. Our quarantine was very poorly conducted. We had marshal's appointed by the Mayor to prevent any persons coming into our midst that had been in infected towns; also, to prevent the reception of such articles of merchandise as was likely to convey the disease, but we did not succeed well. After the disease got into our town we sent the people away.

6. No.

8. In the neighborhood of one thousand dollars.

9. Disinfectants about fifty dollars.

10. I find it impossible to arrive at a proper estimate, but judge the entire losses would amount to something like ten thousand dollars.

J. R. Slaton.

Horn Lake, DeSoto County.

1. On Mississippi & Tennessee Railroad, twelve miles south of Memphis, eighty-eight miles north of Grenada

2. White Haven, Tenn., five miles north; Camp Jo Williams, seven miles north; Hernando, Miss., twelve miles south, with railway and dirt road communication to each.

3. Exposed through a number of refugees, and some cases can clearly be traced (at a country store, three miles west,) to clothing brought from Memphis. Three deaths among people who handled these goods.

4. No, it was not.

6. No; the vicinity had some ten deaths from the fever.

9. Some general sanitation was done in the way of policing and issuing lime and copperas, and parties policed their individual premises according to personal views.

10. It is impossible for me to estimate it financially. The neighborhood lost some valuable citizens.

C. Baskerville, M. D.

N. B. The Reporter respectfully announces that he was at Horn Lake only as his services were required, when he would attend by means of special engine from Memphis, having joined the Medical Department of the Howard Association at that point.

Brandon, Rankin County.

1. On the Vicksburg & Meridian Railroad.

2. Jackson, twelve miles; Lake, forty miles; Meridian, ninety miles; Vicksburg, fifty-five miles, by railroad; Canton, thirty miles, by dirt road; Terry, about twenty miles, dirt road.

4. Yes; town and county, each separately.

5. Absolute non-intercourse with infected points, either by railroad or otherwise, merchandise or travel; all civil officers made officers of the quarantine, and the County Physician placed in charge by the Board of Supervisors.

6. Yes.

7. To the rigid quarantine entirely, as can be demonstrated.

8. Corporation of Brandon, quarantine expense, $779 16; county expenses, $608 46.

9. Twenty-five dollars.

10. After carefully canvassing the town, and making a detailed estimate, it aggregates $25,000 00.

H. C. McLaurin, M. D.,
Late County Physician.

Shuqualak, Noxubee County.

1. This town is immediately on the Mobile & Ohio Railroad, ten miles below Macon, Miss.
2. It prevailed at Meridian, fifty-five miles south of this place; communication by rail and dirt road.
3. No exposure, as all commnnication was cut off by all roads; as soon as the fever made its appearance at Lake Station we quarantined against all roads leading to this place from every quarter.
4. Yes.
5. Enclosed you will find printed regulations No. 5, also our general regulations on printed hand-bills, by which we were governed during the quarantine for this county.
6. Yes.
7. I attribute our escape from the disease to our own strict quarantine, which was enforced to the letter.
8. The cost for this supervisors' district, including this place, Summerville and Mashulaville, fifteen miles west of this, five hundred dollars.
9. Six hundred dollars.
10. About five thousand dollars for this; I don't know what it was for Summerville and Mashulaville.

P. H. Hamilton, M. D.

Duck Hill, Montgomery County.

1. Yes; on the Chicago, St. Louis & New Orleans Railroad.
2. Grenada, twelve miles north; Winona, twelve miles south.
3. There was quite a number of cases in the country near here, and they were necessarily compelled to send here for physicians, medicines, etc.
5. Yes; but the quarantine was not enforced as strictly as it should have been.
7. No; but I feel satisfied we would have escaped, if the quarantine had been rigidly enforced.
8. I don't know.
9. I don't know.
10. It was considerable, but cannot give the amount.

T. R. Trotter, M. D.

Charleston, Tallahatchie County.

1. No; it is ten miles east of Tallahatchie river, ten miles west of railroad, Oakland depot.
2. Grenada, distance twenty-eight miles. A family, distant south of this place six miles, was subjected to yellow fever by one of the family visiting Grenada, and the mortality was great—sixteen died within the family.

3. Our exposure was considerable; physicians who attended the sick six miles south mixed with us more or less.

4. Partially.

5. We had, for a few days, the roads that led to the town quarantined; nearly all the whites left the town for about six weeks, except some three or four young men left to look after the interest of the town.

6. Yes.

7. No, not to the quarantine; probably to our removal. We are situated in the forks of two creeks, the South Tillatoba and North Tillatoba, both rapid streams, but overflow.

8. Small expense; I do not think anything was charged the corporation.

9. Not more than $100 00.

10. All business was suspended for about four weeks; cannot say what the amount was; nothing of any importance.

W. J. Taylor, Mayor.

Tchula, Holmes County.

1. On Tchula Lake, navigable about half the year.

2. "Ituma" plantation, nine miles east of this village, in Holmes county; communication by public road.

3. I saw three cases and treated them, besides coming in contact with much baggage newly from Vicksburg.

4. Yes, through county quarantine.

5. Guards were stationed on all public roads on confines of county, and at landings on Yazoo river, with instructions to admit no one who could not show a certificate of freedom from infection from a Health Officer in county last passed through; some stations were ordered to suspend travel entirely.

6. No.

7. I attribute its escape from the disease as an epidemic to the river quarantine.

8. Guards received $50 apiece per month; do not know exact number—probable ten or twelve.

9. Nothing in this town.

10. Probably $2000.

J. D. Dabney, M. D.

Pontotoc, Pontotoc County.

1. Pontotoc is on no stream, and is thirty-five miles from the Mississippi Central Railroad and twenty from Mobile & Ohio Railroad.

2. Holly Springs and Water Valley, about fifty miles distant, and no regular communication with either place.

3. No exposure.

4. Yes.

5. We kept up a rigid guard and non-communication with the outside world, except as to parties with a clean bill of health. We allowed no goods to be brought in except a few drugs that came from non-infected quarters, and non-infecting wrappings.

6. Yes.

7. We attribute our escape to the quarantine, because after the experience of Holly Springs, and Louisville, Ky., it were idle to boast that the healthfulness of any town can prevent the introduction of yellow fever.

8. Ours was a voluntary guard, involving little or no expense.

9. About fifty dollars.

10. The epidemic was an advantage to our town, bringing a good deal of country trade, that usually goes to the railroad.

W. R. MINNIECE, M. D.,
President Board of Health.

VAIDEN, CARROLL COUNTY.

1. On a railroad, the Mississippi Central.

2. Winona, on the north, distance ten miles, Canton on the south. Railroad communication with both places.

3. There were several instances of persons who came into town who had been in places infected with yellow fever. None of these, however, afterwards developed the fever.

4. Yes.

5. The cars were forbidden to stop within the corporate limits of the town. No goods were permitted to be received from infected points. No passengers getting off the cars were permitted to come in town. Guards, voluntary, were kept upon the principal roads by day and a certain number patrolled the town by night. No one from infected points were permitted to enter the town. The quarantine for awhile was absolute. Suspension of business total for awhile, then partial.

6. Yes.

7. Yes.

8. Two hundred and twenty-one dollars.

9. Two hundred and sixty dollars.

10. The merchants claim that owing to the poor crops in this section they were not damaged by suspension of business, but that with fair crops the damage would have been about six thousand dollars.

V. W. FULLILOVE.

ABERDEEN, MONROE COUNTY.

1. Mobile and Ohio Railroad and Tombigbee River.

2. Grenada, about eighty miles by interior routes, and railroads in the latter. Route is as follows: Up to Grand Junction, across to Corinth, then down to Muldon, Mobile and Ohio Railroad, then out to Aberdeen by way of Branch Railroad.

3. Comparative little except from refugees.

4. It was.

5. To let none pass or repass except such as were duly qualified by having a certificate from a practising doctor of medicine, (not practitioners) with an oath before a Justice of the Peace avowing its correctness, etc., and the impressed seal of a county official. The certificate to certify that the bearer had not been in a yellow fever infected district nor exposed in any way to yellow fever for twenty-five days past. Goods of no description were allowed from infected places.

6. It did.

7. To the quarantine principally and keeping the city in a tolerable good sanitary condition.

8. About three thousand dollars.

10. Probably about five thousand dollars.

E. P. Sale, M. D.

Pleasant Hill, DeSoto County.

1 It is not. It is eight miles from the railroad and about twenty miles from Mississippi River.

2. Hernando, ten miles; Bridgforth's farm, three miles; and Jenkin's farm, four miles, by land.

3. We had no commnnication with any infected district.

4. It was.

5. We permitted no person to enter our town who had been exposed to the contagion or who come from an infected district, nor permitted any goods, wares or merchandise, bedding or anything of the kind brought into our town from an infected district.

6. We did.

7. We attribute it to our quarantine regulations.

8. About fifty dollars, by volunteer guards.

9. Nothing. Done by the citizens gratuitously.

10. Business was almost entirely suspended for two months. I cannot estimate the losses.

H. W. Gray.

Guntown, Lee County.

1. Guntown is situated on the Mobile & Ohio Railroad.

2. Grenada, 75 miles distant. Communication by Railroad, Mobile & Ohio, Memphis & Charleston, and Mississippi Central.

3. If there was a single infected case came near us I do not now remember.

4. Yes.

5. All the roads were picketed. Northern and Southern bound trains were stopped some distance from town and every inquiry made whether any passengers would stop from an infected district, and if so they were compelled to go on.

6. Yes.

7. It could not have been to the quarantine that scared them away. I attribute it to the want of the Materies Morbi.

8. It was a free will service in our town.

9. Nothing.

10. It is impossible to state accurately. I am satisfied very small.

G. W. TRIBBLE, M. D.

BUENA VISTA, CHICKASAW COUNTY.

1. Seven miles from the Mobile & Ohio Railroad.

2. Grenada, Water Valley and Holly Springs, from fifty to seventy-five miles. No direct communication except by dirt road.

3. A few cases believed to be yellow fever occurred in Okolona, twelve miles from this place, and one case five miles from here in the country. All I believe imported from infected points.

4. No.

6. Yes.

10. I suppose they did not exceed five hundred dollars.

J. T. PARKER, M. D.

MARION, LAUDERDALE COUNTY.

1. Immediately on the Mobile & Ohio Railroad.

2. Meridian, five miles south-west of this railroad.

3. Very much.

4. It was, for a short time.

5. By general turnout, and forbidding passage through, or coming to the place.

6. Some suspicious cases of fever, no deaths.

7. By general stampede, most of the citizens left town.

8. Nothing more than our time.

9. Nothing more than contributions to other places.

10. Small, as there is but little business done here at this time.

W. T. HOLLAND.

RALEIGH, SMITH CCUNTY.

1. Not situated on any railroad or navigable stream; is twenty-seven miles to Morton, on the Vicksburg & Meridian Railroad.

2. Thirty-two miles from Lake station, which was the nearest yellow fever we heard of.
3. We are not exposed here at all, and don't think that the yellow fever could prevail here.
4. No.
5. The country was quarantined to some extent against infected places.
6. It did.
7. To the locality and distance from the railroad.
8. Twenty-eight dollars, to Supervisor's court.
9. None.
10. One thousand dollars, on account of not being able to have goods shipped.

G. H. Gray.

Batesville, Panola County.

1. On Mississippi & Tennessee Railroad.
2. Senatobia, twenty-two miles; Garner's, thirty miles by railroad; and Water Valley twenty-five miles by dirt road.
3. Our town was only exposed by trains passing through from infected districts, and occasionally containing yellow fever patients, and sometimes a corpse.
4. Yes.
5. We quarantined against refugees, bagging and dry goods from infected districts; and forbid the public meeting the train at the depot.
6. Yes.
7. Partly to the quarantine, and partly on account of extreme dryness of a strip of country during the whole summer and fall; this place being near the centre.
8. Nothing.
9. A mere nothing.
10. No way of estimating the commercial loss.

S. P. Lester and W. O. Harris.

Rodney, Jefferson County.

1. On the bank of the Missississi river.
2. Bruinsburg, seven miles; Port Gibson, eighteen miles; Claiborne county generally; north-eastern portion of Jefferson county; and boats on the Mississippi river; Tensas Parish, Louisiana, opposite.
3. This question is vague; I do not know what is meant by extent; I suppose it means length of time and exposure; I threrefore answer, from the time yellow fever became epidemic in New Orleans.
4. Yes.
5. No one allowed to come into town from any direction;

no goods capable of carrying infection allowed to be received; boat landings established half-mile below town; men at landing, not allowed to go near a boat while discharging freight; men at the landing not allowed to come up town; country people not allowed to go to the landing; mails fumigated at the landing; goods delivered to country people free of drayage at the picket line; country people not allowed to come near the pickets; one hundred yards being the limit.

6. Yes.

7. Entirely to the rigid quarantine.

8. For maintaining guards and sentinels night and day, $560 00.

9. About $100 00.

10. Losses very slight, if any.

F. W. Coleman, M. D.,
Heatlth Officer.

Tupelo, Lee County.

1. On the Mobile & Ohio Railroad.

2. Holly Springs, about seventy miles; Grand Junction, eighty miles; communication by railroad and through the country.

3. This being a relay station, we were more exposed by railroad communication; but the upper end of this road being strictly quarantined, threw a heavy stress of travel through the country.

4. Yes.

5. By strictly guarding all entrances, and allowing no person nor baggage or other merchandise to enter the place without sufficient evidence that they had not been exposed to the infection.

6. Yes.

7. I attribute our escape to being strictly quarantined.

8. About $500 00.

9. Disinfectants and labor, about $50 00.

10. Little, if any.

A. W. Hunter, M. D.

Como, Panola County.

I. On the Mississippi & Tennessee Railroad, forty-four miles south of Memphis.

2. Senatobia, seven miles; had one case at Como, Mrs. N. Howard, of Grenada.

3. Come to Como on the 12th of August, and taken sick on the 16th day after arrival; died in seventy-four hours; did not communicate it to any one; died in my house, which is isolated; people all fled.

4. No.

6. Yes, saving one case.

7. I had a fever nurse, and kept visitors away; burned the bedding and vacated the sick-room, but not the house.
8. Nothing worth mention.
9. Nothing.
10 Very light, not over $20 00.

J. S. ROSBOROUGH.

RIPLEY, TIPPAH COUNTY.

1. On a railroad; Ripley & Ship Island.
2. Holly Springs, Grand Junction, Lagrange and Michigan City; communication by railroad; distance from twenty-eight to thirty miles.
3. The greatest danger from exposure was from refugees from Memphis and Grand Junction; a number were sent out —two afterwards had fever.
4. Yes.
5. The civil authorities passed an ordinance against our railroad, in bringing freight of any kind from infected districts and cities; also, imposing of fines on the conductor for passing over his road persons from infected districts.
6. Yes.
7. All agree that quarantine prevented it.
8. One hundred and fifty dollars.
9. Nominal.
10. Not onerous.

W. D. CARTER, M. D.

MAGNOLIA, PIKE COUNTY.

1. On the line of the Chicago, St. Louis & New Orleans Railroad.
2. Osyka, ten miles south, and McComb City, seven miles north, both on same line of railroad.
3. The regular stopping of trains running through and from infected places.
4. Yes, after the 12th of August.
5. Cleanliness of private premises, vaults, etc., distribution of lime donated by the railroad company, and its free application to cess-pools or low places containing stagnant water; burning tar kilns and distributing tar gratuitously among the people for purposes of disinfection; requiring every family to build at least one fire on their premises from resinous pine after night.
6. Yes.
7. The quarantine no doubt protected us against direct contact with persons and things from infected places. The drainage of our town is exceptionally good; no filth, garbage or nauseous matter ever accumulates in our gutters. There has never been a case of yellow fever in this place.

8. Aside from this lime contributed by the railroad, we expended $7 50 in cash from August 12th to December 12th, all other contributions being labor, pine knots, etc.

9. The corporation expended about $6 cleaning out the bends of the Tangipahoa river, which runs east of our town.

10. None that we could perceive, as shipments of cotton and general trade were greatly in excess of previous years.

A. LeBlanc.

Taylor's, Lafayette County.

1. Situated on the Chicago, St. Louis and New Orleans Railroad.

2. Holly Springs, thirty miles north; Water Valley, ten miles south; communications, telegrams.

3. We are situated at the foot of the hills, on second bottom, on north side of Yocona river, and generally healthy. Greatest exposure from railroad passage.

4. Yes.

5. Our quarantine regulations allowed no train to stop within corporation limits, no goods nor wares of any kind permitted to enter without first being put off at quarantine station and fumigated thirty days; no person allowed to enter our corporation limits from any infected district under penalty of $150 00; very rigid sanitary laws, and strictly enforced as to cleanliness.

6. Yes, sir.

7. We honestly believe we would have had the fever if we had not had a strict quarantine and a scattering of our citizens.

8. Nominal; every citizen did his part, and at very little cost.

9. Voluntary labor by citizens.

10. We lost ten thousands dollars' worth of trade for want of proper goods, but think we are richer by the strict quarantine measures.

J. T. Alvis, Mayor.

Muldon, Monroe County.

1. On the Mobile & Ohio Railroad.

2. Holly Springs, Grenada, Meridian, and scattered along the Memphis & Charleston Railroad above; communication principally by rail.

3. One case occurred in the county of Chickasaw, twelve miles above, and brought through the country from the Memphis & Charleston Railroad. Our own county escaped the epidemic by the strict quarantine.

4. Yes.

5. No one could enter the county from any infected districts, and all had to carry certificates from physicians to that effect, even traveling through the county. Guards were stationed on the county lines, in the towns and on the railroad.

6. Yes.

7. I attribute it entirely to quarantine.

8. Guards were generally paid about $2 00 per day and night.

10. The commercial loss and the cost of sanitary work is not complained of in the county that I am aware of.

L. M. Sykes, M. D.

Black Hawk, Carroll County.

1. Eighteen miles west of Vaiden, on the Chicago, St. Louis & New Orleans Railroad; sixteen miles east of Sidon, on the Yazoo river.

2. The neareast cases of yellow fever were in the country (at Mr. Meade's), about fourteen miles southwest of us, and at Winona, about twenty-five miles northeast of us.

3. The first case (a Mr. Eggleston) at Mr. Meade's, near Tchula, was imported from Vicksburg and died. The premises were strictly quarantined, and the disease did not extend beyond them, although there were three or four other cases. The fever prevailed at Winona, but the town having been almost depopulated, the epidemic was not extensive.

4. Yes.

5. Our quarantine consisted in a simple regulation permitting all persons to pass immediately through town, but allowing no person to stop within the corporate limits, unless he could furnish indubitable proof that he had not come from an infected locality.

6. Yes.

7. Our escape is to be attributed chiefly, we think, to our isolated position and remoteness from the lines of travel. The quarantine served to notify those residing within infected localities that they could not seek Black Hawk as a place of refuge.

8. The employment of a town marshal, who acted as Health Officer, at $20 00 per month and board.

9. Nothing.

10. No direct loss. As a matter of course, we were affected by the general business depression.

Benj. F. Kittrell, M. D.

Grand Gulf, Claiborne County.

1. On the Mississippi river.

2. Port Gibson, eight miles; Ellison Plantation, eight miles; Karnack Plantation, seven miles; no communications.

3. We were exposed on all sides; one case, supposed to be yellow fever, in about one hundred yards of quarantine line.

4. Yes.

5. The guard duty was performed by the citizens of the town.

6. Yes.

7. I am confident that had it not been quarantined we would have had the epidemic.

8. Actual cost, $3 67.

9. All done free of charge.

10. Comparatively nothing at all. Business was transacted by the guard at the line.

THOS. H. HALL, Mayor.

LEAKSVILLE, GREEN COUNTY.

1. Nearest point seventeen miles from the Mobile & Ohio Railroad.

2. Mobile, Alabama, fifty miles distant; private communication; there were some few cases at Citronelle, on the Mobile & Ohio railroad, twenty-five miles distant.

3. The quarantine on the Mobile & Ohio railroad, protected from that source, but were exposed by refugees from the coast of Mississippi traveling through our county by private conveyance.

4. It was not.

6. Yes.

7. Being remote from infected points and a healthy piney woods region.

W. E. THOMAS.

HICKORY FLAT, BENTON COUNTY.

1. Not situated on either; situated twenty-two miles east of Holly Springs, on Pontotoc and Holly Springs road.

2. Holly Springs is the nearest point; no communication.

5. Was not.

7. We escaped the yellow rever; cause, no communication between this place and where it prevailed.

8. None.

9. No cost.

10. None.

Respectfully,
G. S. MATLOCK, M. D.,

NEWPORT, ATTALA COUNTY.

1. Nine and one-half miles from Goodman, on the Missis-

sippi Central Railroad; six miles from Sallis, on the Kosciusko branch.

2. Canton, thirty-eight miles; Winona, about fifty miles; both on the Mississippi Central railroad.

3. Very slight; mostly tramps.

4. No.

6. Yes.

7. Distance from epidemic.

10. Two thousand to three thousand dollars.

H. L. DICKEN, Mayor.

WEST STATION, HOLMES COUNTY.

1. Chicago, St. Louis & New Orleans Railroad.

2. Winona, north twenty miles; Canton, south, forty-five miles; railroad communication.

4. Yes.

5 Our quarantine was absolute, prohibiting persons from coming from any place into our town under any pretext.

6. We did.

7. We attribute it to quarantine.

6. Fifty dollars per month.

9. For two and one-half months.

10. Business was almost suspended for about two months.

L. A. POWERS, Mayor.

SALLIS, ATTALLA COUNTY.

1. On the Kosciusko Branch.

2. Canton on the south, and Winona on the north; distances of about forty miles.

3. By public travel from passing trains; also from refugees by private conveyance; also by empty car from infected districts, placed on our side track, which was immediately burned.

4. Yes.

5. Our quarantine laws were, as elsewhere, very rigidly enforced.

6. Yes.

7. To the quarantine.

8. About $300 00.

9. Forty dollars.

10. We think the quarantine was, commercially, a blessing, as we made a failure in crops.

J. G. SALLIS, M. D.

TAYLOR'S DEPOT, LAFAYETTE COUNTY.

1. On the railroad; old Mississippi Central railroad now called the Chicago, St. Louis & New Orleans railroad.

2. Water Valley on the same road; communicated mostly by telegraph and mail.

3. Was exposed only to trains and tramps.

4. Only in form, not enforced.

6. One very suspicious case occurred which resulted fatally; which was diagnosed as enlargement of the liver, but the manner of dying was exactly like many cases of yellow fever; but all the symytoms of yellow fever were not present.

7. To the removal of the inhabitants, and want of contact with infected persons.

8. Nothing.

9. We required each one to clean up and disinfect their own premises.

10. Our merchants suffered great loss; there was almost a total suspension of business.

B. F. Archer, M. D.

Edwards, Hinds County.

1. Yes, on Vicksburg & Meridian Railroad.

2. At Smith's Station, four miles west on Vicksburg & Meridian Railroad; at Bolton's Depot, ten miles east on Vicksburg & Meridian Railroad; at Dr. Williamson's residence, about one hundred yards from corporate limits; and in fact on all sides of us, in close proximity.

4. Yes.

5. Our quarantine was enforced strictly, prohibiting all persons from entering limits, no matter who they were or where they came from, at the same time arranging for the accommodation of persons at picket posts without their entering. No freight was allowed to be unloaded or brought into limits which had passed through infected districts; no trains allowed to stop in limits.

6. Yes, with the exception of two cases which came in after quarantine was raised, but did not spread.

7. We attribute our escape to quarantine.

8. About five hundred and fifty dollars, including disinfectants.

J. B. Greaves, Mayor.

Goodman, Holmes County.

1. On the Chicago, St. Louis & New Orleans Railroad, and about one-half of a mile from Big Black River.

2. Ways Bluff, twenty miles below Goodman, on the Railroad, and a plantation about twenty-four miles northwest of Goodman in Holmes county. No public conveyance to the last named place.

3. The only exposure that our place was subject to was from cases of fever liable to be upon the cars passing through

the town, or from some railroad men, who had been in contact with other railroad employees who were constantly running into infected places.

4. Yes.

5. Allowing no one to enter our town from an infected place. Requiring all parties from any place whatsoever to stay in quarantine fifteen days before entering the corporate limits. Refusing the Railroad Company permission to stop any of their trains inside the corporation, and allowing no one getting off trains at quarantine station to enter the town until he or they had been in quarantine fifteen days as above.

6. Yes.

7. We attribute our escape more to our rigid quarantine than to any other measure adopted by us.

8. About three hundred and thirty dollars.

9. One hundred and thirty dollars.

10. These were individual losses, and much damage to trade, but to what extent it is impossible to say—quite heavy though.

D. H. WALLACE.

ABBEVILLE, LAFAYETTE COUNTY.

1. Chicago, St. Louis and New Orleans Railroad.

2. Holly Springs and Water Valley. Holly Springs is twenty miles; Water Valley, thirty, by railroad.

3. Exposed by railroad trains passing and repassing daily, and also from refugees from Memphis, and other infected places.

4. It was.

5. No trains were allowed to stop in the corporation, nor land any goods of any description, and the various dirt roads leading into the town were picketed, and no person from any infected district or place allowed to pass through.

6. It did.

7. To the quarantine entirely, as without it, our exposure being very great, we would certainly have had the fever.

8. About twenty-five dollars; nearly all the work was voluntary.

9. Nothing in cash.

10. We are of the opinion that the commercial and other losses were very small—nothing perhaps.

C. A. PEGUES.

WAYNESBORO, WAYNE COUNTY.

1. On the Mobile & Ohio Railroad.

2. Yellow fever prevailed at Mobile and Meridian, eighty-two and a half miles north of Mobile, and fifty-three miles south of Meridian.

3. I consider that we were in imminent danger from both north and south by way of the Mobile & Ohio Railroad, and that the only safeguard left our people was in a quarantine rigidly maintained.

5. We established a rigid quarantine, not permitting any travel to or from our village, and had special officers appointed and paid to execute the law to the letter; even the mails were not permitted to be received during the epidemic.

7. We had one case of yellow fever here, imported from Meridian, but did not spread; this I attribute to the disinfection of our turpentine distilleries, which are established within our midst.

8. It cost us about fifty dollars per month.

9. This was performed by the corporation authorities without cost.

10. I can't say that we really sustained any loss.

J. R. S. Pitts, M. D.,
President Board of Health.

Pittsboro, Calhoun County.

1. Twenty-five miles from Mississippi Central Railroad.
2. Water Valley, twenty-seven miles by dirt road.
3. Not very great.
4. It was.
5. No one was allowed to pass through or come from a distance and stop without a certificate that he was not from an infected community; also goods were prevented from being brought into town.
6. It did.
7. I think quarantine had much to do with keeping it away.
8. We were at no expense whatever.
9. No cost.
10. The commercial loss was something, though I do not know to what extent. John Dorrah and J. G. Ryan were the Board of Health.

J. B. Shaw, Mayor.

Meadville, Franklin County.

1. None. Thirty-three miles from Railroad and thirty-six miles from the river, at Natchez.
2. Summit, thirty-three miles.
3. No quarantine, and no restriction to travel.
4. No.
5. None.
6. Yes.
7. Don't know.
9. None.
10. None.

H. C. Mayer.

COFFEEVILLE, YALOBUSHA COUNTY.

1. New Orleans, St. Louis & Chicago Railroad.
2. It was within fifteen miles of us on the south, at Grenada, and twelve miles north of us, at Water Valley.
3. The greatest exposure was the trains passing through the town, but not allowed to stop.
4. Yes.
5. By a strict guard being kept up day and night, and no one allowed in nor out except through permission of the Board.
6. Yes.
7. We attribute it to a rigid quarantine.
8. About three hundred dollars.
9. None, all citizens did their own sanitary work.
10. All business was suspended, but no special damage, so considered by our merchants.

A. A. POWELL,
President Board of Health.

BIRMINGHAM, LEE COUNTY.

1. Six miles northwest from Saltillo, and six miles from Mobile & Ohio Railroad.
2. Holly Springs, distance by dirt road, fifty-three miles; distance by railroad, via nearest route, Grand Junction and Corinth, one hundred and fifty miles.
3. A few refugees passed through our town from Holly Springs and vicinity during epidemic last summer.
4. No.
6. Yes.

G. S. HENDERSON.

Epidemic at Winona, 1878.

By B. F. WARD, M. D., President County Board of Health.

Town elevated and dry; built on a succession of ridges; with intervening ravines which thoroughly drain it; abundance of pure well water.

Never had yellow fever before; quarantine rigid, but established after introduction of first case, as we trusted that the isolation of this case would exempt us from infection.

Quarantine effective, amounting to non-intercourse with public travel, prohibition of all freight, from all points, and of mail matter from infected points; would undoubtedly have protected us, if first case had not entered before we were aware of the danger.

First case, Mrs. Peebles; resides twelve miles from here in

the country; contracted the fever in Grenada, where she had been nursing it in the family of her son-in-law, Mr. Thomas Peacock; though the disease had not, at that time, been recognized as yellow fever, or so declared, at least, by the physicians in Grenada.

Stopping here on her way home, she was attacked on the the 9th day of August, about the 5th day after leaving Grenada. On the 10th day after seizure, convalesence was so far established that she was able to be placed on a bed and removed, in a wagon, to her home As she was taken sick in the house of Capt. D. L. Sweatman, I had his family removed to the country as soon as possible after discovering the nature of the fever, leaving no white person with her, but her son from the country and myself as her physician.. All of Capt. Sweatman's family escaped; I advised the near neighbors to leave town, as a matter of precaution.

Sheriff C. H. Campbell, whose residence lot is immediately adjacent to Capt. Sweatman's, his house being about thirty-five yards distant, removed his family to Tennessee, and they all escaped. Mr. Jo. C. Kittrell, a merchant, whose lot adjoined Campbell's, his house being about seventy yards from Sweatman's, remained at home, and the fever next appeared in his family, where four cases occurred in rapid succession, two of them being fatal. These cases were developed on the 12th, 17th, 18th and 20th of September; the first two cases being the wife and daughter of Mr. Kittrell; they remaining at home day and night; the next two were Mr. Kittrell and his clerk, who were at home only at night and at meals, spending the day in the business part of the town, which was, as yet, uninfected.

After the occurrence and death of the 4th and 5th cases, there was a general stampede, so that out of a population of fourteen hundred, in twelve hours, not more than fifty persons remained, and they scattered, mostly in remote parts of the town. The 6th case occurred on the 24th of September, this one being still a few hundred yards further off. The fever then extended itself gradually and uniformly, in concentric circles around the infected point and proceeded slowly and at long intervals to pick up the stragglers. In no instance, except one, did it pass by the inmates of a habitation to attack those beyond. The family of Mr. Roy, who occupied the upper story of a tall brick building, entirely escaped; though directly exposed to the fever.

We had altogether only thirty-one cases and ten deaths.

All evidence goes to prove that the disease was not of local origin. Propagation or mortality probably not influenced by local conditions. Fever was arrested by reduction of temperature to freezing point. No new case after first ice. Of the five last cases who were overtaken by the cold weather four

were rapidly fatal. The one recovery, my own case, due entirely to faithful and judicious nursing.

The black race presents greater resistance to the poison of yellow fever than the white race; females of both races more resistance than males. I regard the fever as non-contagious; don't think the poison is conveyed by winds. Regular and even excessive indulgence in alcoholic stimulants did not appear to increase susceptibility to the disease.

Quinine and sulphite of soda were used extensively as prophylactics. I consider them worthless.

Carbolic acid, lime, sulphate of iron, sulphur, etc., liberally employed as disinfectants, and, in my opinion, are utterly destitute of value.

Sleeping beyond the infected limits at night does not protect nor exempt from attack those who are exposed during the day.

Actual expenditures for medical attendance, medicines, nursing, funerals, sanitary work and quarantine, about $2000. Loss on bedding, etc., destroyed, very little. Loss on expenditures of refugees, trifling. Commercial losses, almost nothing, as the legitimate trade at this point was simply suspended, not destroyed nor driven away.

The agricultural interests immediately adjacent were rather promoted than otherwise, as the panic kept people away from towns and railroads, prevented a further accumulation of indebtedness, and enabled them to gather their cotton earlier and put it on the market in good condition.

B. F. WARD,
President County Board of Health.

WHITE CASES.

Adults, Male	7
Adults, Females	6
Total	13
Children, Male	3
Children, Female	2
Total	5
Total white cases	18

BLACK CASES.

Aduls, Male	2
Adults, Female	5
Total	7

Children, Male	1
Children, Female	0
Total	1
Total black cases	8

MULATTOES.

Adults, Male	2
Adults, Female	2
Total	4
Children, Male	0
Children, Female	1
Total	1
Total mulatto cases	5
Grand total cases	31

DEATHS—WHITE.

Adults, Male	4
Adults, Female	1
Total	5
Children, Male	2
Children, Female	0
Total	2
Total deaths	7

DEATHS—BLACK.

Adults, Male	1
Adults, Female	0
Children, Male	1
Children, Females	0
Total	2
Total deaths, black	2

DEATHS—MULATTOES.

Adults, Male	0
Adults, Female	1
Total	1

Children, Male	0
Children, Females	0
Total	0
Total deaths	10

Epidemic at Meridian, 1878.

By P. H. Griffin, M. D.

At the request of Dr. Geo. E. Redwood, President of the Board of Health of Meridian, who has kindly proffered to aid me with such statistical data as can now be obtained appertaining to the late epidemic at this place, I will try to satisfy the memorandum forwarded by the State Board of Health, as a guide and aid for reporters on yellow fever.

I will seek brevity, but should I wander into details unsolicited, I trust to receive the approval of the practioner, whose fortune or misfortune it has been never to have combatted this fell destroyer, by giving before closing some prominent symptoms by which the disease in its progress, with a reasonable degree of certainty, can always be recognized; and if I should dwell a little because of some deficiencies in our medical authorities, relative to certain diagnostic points, it will be on account of the difficulty the physician inexperienced must encounter, at the outset of an epidemic, in determining the cases that first appear.

An outbreak of yellow fever affords indeed a trying occasion for a local Board of Health. They are rudely jostled by an anxious and expectant people, who with their lives and interest alike at risk look to them for advice. It is then that their qualifications and capabilities are severally and severely taxed and tried, and their patience too; for while seeking to avoid what they may deem an unnecessary commercial disturbance, and to stay the already turbulent excitement prevailing among a people tremulous and bordering on a panic, by awaiting the indubitable evidence of typical cases; their caution may be construed into tardiness, their professional reputations and attainments questioned, and even their characters grossly assailed by an unappreciative public. But while passing through this Scylla and Charybdis, an intelligent physician, by the exercise of due caution, sound judgment and accurate discrimination, can always remain master of the situation. From the past we learn, and guarded by its reflected lights, our footsteps should be guided and directed in the future.

TOPOGRAPHY, HISTORY, GROWTH AND POPULATION OF MERIDIAN.

Meridian is situated on the Mobile & Ohio Railroad, passing *en route* 135 miles from Mobile, and at the terminus of the Vicksburg & Meridian Railroad, the Alabama & Great Southern Railroad and the Alabama & Chattanooga Railroad. It is built on a plateau, with northern and western portion of the town gradually ascending to a higher plane, embracing an area within its corporate limits of about one mile square. Its surface is composed of a sandy loam with a clay foundation, and is sufficiently undulating for perfect drainage. Its waters on an incline converge in common towards a branch or large ditch, which meandering through the central portion of the town affords a convenient receptacle for the prompt removal of all debris, by discharging in the Sowashee, half-mile distant, a creek running east of and parallel with the Mobile & Ohio Railroad. Hence, during the winter and spring months the place is free from the thick, tenacious limestone mud we find so objectionable as we go westward, towards and within the Mississippi delta and the prairie country above. The height of Meridian above sea level, according to the profile of the Mobile & Ohio Railroad, is—can't be exactly ascertained, but supposed to be about four hundred feet. It is bound partly on the south and west by a chain of small mountains or large hills, some spurs of which, disconnected, present quite a picturesque appearance, on account of their abrupt perpendicularity and altitude, which ranges from about two hundred to two hundred and fifty feet.

Meridian is comparatively a new town, and may be properly said to be a product of our "lost cause;" for the results of the war falling so disastrously on the people of the South, and finding them so ill prepared, brought about a restless disquietude, causing many to cast about for a change of pursuits and to seek other fields of enterprise; and being a railroad center, and exceptionally accessible, besides favored with a salubrious climate and good free-stone water, it became also a center of attraction. It is, therefore, not surprising that from a small depot in 1862, it soon reached out and attained at its maximum, a population between five and six thousand, which gradually settled to a more permanent population amounting before the epidemic to about four thousand During the fever this number was reduced to five or six hundred.

QUARANTINE.

A city "Board of Health" was organized August 13th, and a quarantine at once established against all infected places. Sanitary police officers, under the direction of the "Board of Health," were appointed, aided by a volunteer force of citizens

and immediately assigned to duty. On the 15th, notice was received by Dr. Redwood, President of the Board, from Dr. Balfour, Health Officer of Vicksburg, announcing two cases of yellow fever in that city. At once, a telegram was sent to the railroad officers at Vicksburg notifying them that until further notice, all trains and passengers from that point were prohibited to enter Meridian, but through a misunderstanding on the part of the officers at Vicksburg, a train came up on the night of the 16th, and five of its passengers lodged over night at the European House. Two of them took the fever after leaving here and died elsewhere. Doubtless the germs of the disease were left by those passengers, for R. J. Mosely, proprietor of the hotel, afterwards was stricken with the fever and died, and seven cases in all are traceable to this hotel. After this time, 16th, the Vicksburg train was stopped two miles from the city limits at a quarantine station, and was met by the Chattanooga train, which was allowed to back down to that point, for the transfer of passengers and baggage, going east and northward, which train was permitted to pass through the city by returning at the rate of eight miles an hour. Certificates of health were required from the Health Officers of Vicksburg, and a clean bill of health demanded. On the 20th the quarantine was ordered to extend to the county line. It was thus that the disease originated here; by our railroad officers and mail agents being exposed to, and coming in contact with infected cars, passengers, baggage and freight from Vicksburg, by permitting through transportation as an act of humanity; this being then the only outlet and escape from that infected city, all other routes being closed against her. And besides, by undertaking to take charge of Lake by supplying physicians, nurses and medicines, and by the railroad inter-communication resulting therefrom. At the time, our city was clean, and the surrounding country healthy. It was its first visit to Meridian, except one or two cases brought here from New Orleans in 1872, which did not spread on account of their isolation.

Cases—1st. J. R., engaged in the transfer of the mail from the Vicksburg railroad, August 27th, recovered. Second: J. E., September 20th, died 27th. Third: F. E., who nursed J. E., his father, September 29th, recovered. Cases traceable to negroes from Vicksburg occupying an adjoining house, who clandestinely intruded, without the consent or knowledge of the Board of Health or other authorities. Fourth: A. W., September 7th, recovered, engaged in Cotton Seed Oil Mill adjacent to the Vicksburg railroad. Fifth: Mrs. T., September 26th, died, a nurse for the preceding A. W. Sixth: B. M., September 29th, died, a nurse for Mrs. T. Seventh: E. P. and J. P., patients of Dr. K., were taken as early as August 24th and 25th, recovered, attachees of the Vicksburg & Meridian Rail-

road. With a view to brevity, without a continued enumeration of cases, suffice it, that none of the families or nurses of the foregoing escaped the infection. I might extend the list, through the aid of other physicians, but they all go to prove that the disease was not indigenous, but when once implanted it became highly infectious and contagious, and spread with increased rapidity and malignity as the season advanced.

Dr. Redwood, whose opinion is entitled to consideration, from long experience obtained through previous epidemics, visited my early cases with me. And while here, as elswhere, some professional difference of opinion existed in regard to cases in the beginning, as the disease advanced, and the symptoms became more pronounced and typical these discrepancies were reconciled. The disease was obstinately protracted, on account of the long continued, unabated, warm weather. My only daughter, Ada, returned from the country after the severe frosts of November 1st and 2nd, and took the fever November 20th, had a severe attack, but recovered. I was sick at the time of her return. Mrs. W., a returned refugee, a patient of Dr. K., took the fever as late as the 29th of November, attributable to her supervising the cleansing of adjacent houses and premises, where there had been previously cases of yellow fever. From first to last we had four hundred cases with one hundred deaths, and all may be said to have been from yellow fever.

The disease first made its appearance on a level plane along the line of railroad, extending through the city from its head to its foot, and for a long time it clung, with remarkable tenacity to this circumscribed district.

Its diffusion from this quarter was slow and gradual, and many cases in other quarters can now be traced to inter-communication, while others escaped by isolation at home, on a higher plane above, and by avoiding contact with persons and premises. As proof of the contagiousness of this fever, I will state that I know of but two or three among a number of twenty or thirty nurses, white, who, unprotected by previous attacks, escaped the infection.

With regard to negroes, while they did not enjoy last year that exemption so often and so conspicuously heretofore dwelt upon, I found their cases as a rule less virulent and more amenable to treatment than the whites. This immunity from the disease obtained here in a most striking manner, with respect to females generally, regardless of "color, race or previous condition."

We have nothing satisfactory to offer with regard to wind currents, as a morbific factor in this disease. While only conjectural, it is reasonable to suppose, that the withering blasts, day after day, from the southwest, if inadequate to revitalize the dormant germ, might give activity to the poison already

imported. The necessity of further investigation, and the accumulation of additional facts, are apparent for the demonstration of such an hypothesis. Again, as analogous we hear of victims of yellow fever, through the poisonous effluvia emanating from bodies in process of decomposition, occasioned by the reprehensible and hazardous practice of too early exhumation. With regard to this point I have no facts to present.

We do not find by reference to sick memorandum, or mortality list that the previous condition and irregular habits increase the susceptibility, nor that the patients were more obnoxious to the disease. By comparison, we find exemptions and the ratio of recoveries of this class, to tally favorably under equal care, with the more privileged and better protected. No positive evidence of value was obtained by the use of prophylactics. Salycilic acid, iron and quinine were used, but the results were equivocal, to say the least. Cleanliness, and the usual disinfectants, lime, carbolic acid, copperas, etc., were abundantly used, but were powerless to prevent, or stay the progress of the disease. Isolation seemed to be the only effective means—though houses, clothing and bedding, were subjected to free ventilation and disinfectants.

EXPENDITURES AND LOSSES OF MERIDIAN, MISSISSIPPI, INCIDENT TO THE EPIDEMIC OF 1878.

a.	The value of time lost by those sick with disease, at $1 00 per day.....	$ 4,000 00
b.	Cost of medical attendance, medicines, nursing sick, etc.....	10,000 00
c.	Cost of funerals.....	1,500 00
d.	Cost of sanitary work, including expense of quarantine.....	2,500 00
e.	Value of bedding, clothing, etc., destroyed	500 00
f.	Loss of profits on the expenditures abroad of refugees.....	3,500 00
g.	Local commercial losses by interruption of business and diversion of trade, etc.....	$ 300,000 00

REPORT OF THE

STATE BOARD OF HEALTH,

FOR 1879.

MINUTES—1879.

ABERDEEN, MISSISSIPPI, April 5th, 1879.

THE MISSISSIPPI STATE BOARD OF HEALTH met at the Court House, at nine o'clock, A. M.

Present—Dr. Kells, President; Drs. Dancy, Hill, Taylor, Smythe, Kittrell, Redwood, Rice and Johnston.

It was announced that Dr. F. W. Dancy, from the State at Large, whose term expired on March 28th, 1879, had been re-appointed by the Governor; and that upon the recommendation of the Mississippi, State Medical Association, the Governor had by telegram, made the following appointments to fill existing vacancies on the Board:

Third District—Dr. B. F. Kittrell, vice Dr. E. W. Hughes, deceased. Fourth District—Dr. Geo. E. Redwood, vice Dr. A. H. Cage, deceased. Sixth District—Dr. C. A. Rice, vice Dr. P. F. Whitehead, deceased.

The new members having then taken the oath of office, and a quorum being present, the Board proceeded to business.

It was announced that the State Medical Association had recommended, and the Governor had appointed, the following members whose terms of office will begin on the 7th inst:

First District—Dr. E. P. Sale. Second District—Dr. John Wright, re-appointed. Third District—Dr. S. D. V. Hill, reappointed.

It was also announced that the State Medical Association had recommended Dr. J. W. Bennett for appointment from the Fifth District, vice Dr. C. A. Rice, who had removed to the Sixth District; and the re-appointment of Dr. Geo. E. Redwood, from the Fourth District, whose term will expire on the 7th inst.

The Secretary read his report, which was received and adopted.

The Secretary stated, that he had at different times, received funds from the Auditor of Public Accounts, to pay for postage, telegrams and expressage for the Board; and requested that a committee be appointed to examine his books and vouchers.

On motion of Dr. Dancy, Drs. Kells and Johnston were appointed a committee to prepare an address on Sanitation.

The President appointed the following Finance Committee Drs. Rice, Taylor and Hill.

The Secretary stated that he had commenced the work of collecting a history of the epidemic of 1878, including a history of the quarantines that were established. On motion of Dr. Taylor, he was instructed to proceed with the work.

The Board proceeded to the election of a President, for the ensuing year; which resulted in the choice of Dr. C. A. Rice.

On motion, Dr. Hill was appointed a Committee to inform Dr. Rice of his election.

The following resolution, offered by Dr. Hill, was adopted:

Resolved, That the thanks of the Board are cordially extended to the retiring President, Dr. Robt. Kells, for the able, just and courteous manner in which he has uniformly discharged the duties of his office.

On motion of Dr. Taylor, Drs. Sale and Kells were added to the Committee on Legislation.

The Finance Committee reported the following, as the expenses of members incurred in attending this meeting:

Dr. Hill, $6 00; Dr. Johnston, $20 25; Dr. Kells, $20 95; Dr. Smythe, $3 85; Dr. Dancy, $15 00; Dr. Taylor, $11 00; Dr. Kittrell, $19 00; Dr. Rice, $31 65. The accounts were duly certified to, by the President and Secretary.

On motion of Dr. Taylor, Rule No. 5, creating a Finance Committee, was abolished.

By Dr. Hill:

Resolved, That the thanks of the State Board of Health are due, and are hereby extended to THE CLARION, of Jackson, for the uniform interest it has manifested in our organization, and its kind appreciation of our services, as evidenced in numerous editorials, and that our thanks are also extended to the other papers of the State that have favorably noticed our efforts.

On motion the Board adjourned to meet at Jackson on the first Monday in April, 1880.

JACKSON, MISSISSIPPI, July 15th, 1879.

At a called meeting of the STATE BOARD OF HEALTH, the following members were present: Dr. C. A. Rice, President; Drs. Kells, P. J. McCormick, G. E. Redwood, J. W. Bennett, S. D. V. Hill and B. F. Kittrell.

The President having called the Board to order, in the absence of the Secretary, Dr. Kittrell was elected Secretary *pro tem.*

The President stated that he had called the Board together to consider the question of Quarantine, in view of the proba-

ble advent of another epidemic of yellow fever. He explained the absence of uniformity of action in this matter, on the part of the various health authorities—that the railroad corporations, operating lines in this State, have declared it to be impracticable to run their trains under such conflicting and arbitrary quarantine regulations as were enforced last year; that the National Board of Health had adopted certain rules, governing the transportation of passengers and freight by both railroad and river, which are intended to secure such uniform quarantine regulations as will effectually protect the people from the spread of infectious disease, and yet not to be so rigid as to put an end to necessary commercial intercourse. The National Board of Health had submitted a copy of these rules for adoption by the State Board, and had asked co-operation for their enforcement. He further explained that under the law as it exists in this State, the State Board of Health has no power to enforce a uniform system of quarantine regulations; that county and municipal Boards have plenary power to enforce such regulations as they may deem proper without consulting the State Board. He had called the Board together to consider these questions, with a view to securing, if possible, the co-operation of the State and local Boards by the adoption of such measures as will command universal respect and support, and thereby prevent the many disasters that must result from the want of uniformity of action in this vitally important matter.

The rules of the National Board were then considered seriatim, and adopted.

After the reading of the rules and regulations, the following preamble and resolutions, offered by Dr. McCormick, were adopted:

WHEREAS, The State of Mississippi has no general quarantine law; that the law giving authority to County Boards of Supervisors and to local municipal authorities to enact and enforce quarantine laws which have only local effect, and may, and will in many cases, work detriment and injustice to persons of another portion of the State, and believing as we do, that a general and uniform set of quarantine rules and regulations would best subserve the rights and health of all, and would insure a united action of the State sanitary officers in looking to the common weal of her people in health and disease, and better protect us from the incursion of yellow fever and other diseases; therefore,

Resolved, That the State Board of Health of Mississippi, in extra session at Jackson, Mississippi, this the 15th day of July, 1879, do fully endorse and adopt the rules and regulations of the National Board of Health as proposed for the government of State and municipal Boards of Health, and that we reccommend the adoption of said rules by all municipal authorities throughout the State.

The following resolutions were offered by Dr. Kells, and adopted:

Resolved, That the President and Secretary of this Board, be appointed a Committee to prepare a circular address to the county and municipal Boards of Health throughout the State, urging upon them the importance of co-operating with this Board in the adoption and enforcement of the Rules and Regulations prescribed by the National Board of Health.

Resolved, That the President of this Board be requested to prepare a memorial to be presented to the National Board of Health praying for such assistance as may be required to enable this Board, until the necessary power and means be provided by the State Legislature, to carry out the Regulations approved by both the National and State Boards.

On motion, the press of the State were requested to publish the minutes of this Board for the public information.

No further business appearing, the Board adjourned *sine die*.

C. A. RICE, President.

B. B. KITTRELL, Secretary, *pro tem.*

JACKSON, MISSISSIPPI, August 8th, 1879.

At a called meeting of the State Board of Health held this day, there were present: The President Dr. Rice, Drs. Sale, Hill, Redwood, Wharton, Bennett and Johnston.

The President stated the object of the meeting to be the establishment of Quarantine Stations under the authority and by the assistance of the National Board of Health.

The Secretary read letters from Drs. Taylor, Kittrell, Isom and Dancy, stating their inability to be present.

The Secretary stated, that on the 19th of July he had telegraphed the National Board of Health asking for power and money to establish quarantine stations at the limits of the State, and that in reply he was told to send on detailed estimates of the amount of money needed; that the Executive Committee of this Board accordingly prepared and sent on the estimates by telegraph, which, after being referred to Dr. S. M. Bemiss, a member of the National Board, for revision, were approved with some modifications, by the National Board.

On motion of Dr. Hill, the estimates, as revised by the National Board of Health, were agreed to.

The Board selected the following points for the establishment of quarantine stations: Osyka, on the Chicago, St. Louis and New Orleans Railroad; Michigan City, on the Chicago, St. Louis and New Orleans Railroad; Fort Adams, on the Mississippi River, and a point between Commerce and the Tennessee line on the Mississippi River.

On motion, the Secretary was instructed to telegraph the National Board of Health, asking for authority and means to

establish a fifth station at Corinth, on the Mobile & Ohio Railroad.

On motion, the Board adjourned until 3:30 o'clock, p. m.

EVENING SESSION.

The Board met at 3:30 o'clock. The President in the chair.

Dr. Geo. E. Redwood was chosen a quarantine officer and assigned to duty at the Michigan City Station. He was authorized to select his assistants.

The following, offered by Dr. Hill, was adopted:

Resolved, That the Executive Committee be empowered with authority to appoint all quarantine officers and to superintend the details of establishing the quarantine stations, this day selected for the State of Mississippi.

The following instructions for quarantine officers, offered by Dr. Hill, were adopted:

Each quarantine officer in charge of a station, under control of a State Board of Health, is required to be faithful and diligent in enforcing the rules and regulations of the National Board of Health as adopted by the Mississippi State of Health, and to obey instructions given from time to time by the Executive Committee.

No quarantine officer shall leave his station without having a suitable medical representative in his place.

Regular weekly reports shall be made by the quarantine officers to the Secretary of the State Board of Health, containing all important transactions of his station. Intermediate reports of important occurrences and events are expected to be made.

Each quarantine officer shall have full control and management of the subordinates of his station, and is responsible for the property entrusted to his care.

The Executive Committee of this Board will give full instructions to quarantine officers for their guidance and control, which they are expected to obey.

On motion, Drs. Hill and Sale were appointed a committee to prepare an address to the authorities throughout the State informing them of the action of the Board in establishing quarantine stations.

On motion of Dr. Sale, the Board adjourned.

REPORT OF SECRETARY.

FOR 1879.

JACKSON, MISSISSIPPI, Dec. 1st, 1879.

TO THE BOARD OF HEALTH OF THE STATE OF MISSISSIPPI:

GENTLEMEN—The following report of this office is respectfully submitted.

The following circular letter and memorandum, soliciting reports on the epidemic of yellow fever in 1878, were sent to a physician at each place where the disease prevailed:

OFFICE OF MISSISSIPPI STATE BOARD OF HEALTH,
JACKSON, MISS., February 10th, 1879.

Dear Doctor:

We would feel greatly obliged if you will furnish us a complete history of the recent epidemic of yellow fever in your place. We desire it for publication in our next report. The enclosed memorandum is intended to give you some idea of the points we wish to obtain. Should you think of any others of interest, not included in the memorandum, we would be glad if you will also record them.

The treatment of yellow fever is a subject of the greatest interest, but we, acting in the capacity of a Board of Health, cannot embrace it in our report.

We have to request you to make the history as concise as possible consistent with an accurate account of the epidemic, as our next publication will be somewhat crowded.

Please write on only one side of the paper.

The State Board will meet on the 6th of April next, and I would be glad if you can furnish me the manuscript by the first of that month.

The subject is one of the greatest interest, and it is hoped that you will comply with our request.

Very truly yours,

WIRT JOHNSTON, M. D.,
Secretary State Board of Health.

MEMORANDUM FOR REPORTERS ON YELLOW FEVER.

1. Describe the location and surroundings of your place, height above sea level, etc.

2. Has yellow fever ever visited your place before?

3. Was your place quarantined? If so, what was the mode of establishing or enforcing the quarantine?

4. Was there any evasion or violation of the quarantine? If so, state the facts connected with such violation or evasion.

5. State the history and date of the first case of yellow fever in your place.

6. State how the first case contracted the disease, whether from a person sick with the disease, or from an infected place, or whether from fomites. If from fomites, give the place from which sent or shipped; their character, such as goods, clothing, trunks, packages, etc., and how transported, by rail, boat or private conveyance.

7. State the next cases occurring, with their dates, and the connection with the first case as respects locality or contact.

8. Mention any facts which, in your opinion, prove the disease was of local origin.

9. State the local conditions, if any, which seemed to influence the propagation or mortality of the disease, such as malaria or unsanitary conditions of any kind.

10. State the date of the last case of yellow fever.

11. To what cause do you attribute the cessation of the epidemic.

12. Were the number of cases during the epidemic, or the mortality, influenced by the temperature?

13. If you can, state the usual period of incubation of the disease.

14. Do you regard yellow fever contagious or non-contagious?

15. Does your experience lead you to believe that yellow fever poison is conveyed by the winds?

16. Mention any differences in degree of resistance to yellow fever poison by different races, sexes, ages or occupations.

17. Mention any increased personal susceptibility to the disease induced by habits or condition of health.

18. Do you know of any instances where prophylactics were effective?

19. State fully any facts which show that quarantine protected any portion of your place or any households?

20. Mention any peculiar characteristics observed in this epidemic not observed in previous epidemics.

21. What was the population of your town before the epidemic?

22. What was the population during the epidemic?

23. State the total number of cases of the disease; adults, males and females; children, males and females, of whites, blacks and mulattoes respectively.

24. State the total number of deaths; adult, males and females; children, males and females; of whites, blacks and mulattoes respectively.

25. What sanitary measures were adopted in your place before the epidemic?

26. What disinfectants were used, and give your opinion of their value in preventing yellow fever?

27. What measures did you adopt after the appearance of the disease to check its progress, and with what result? State fully the process of disinfection in regard to localities, houses, bedding, clothing, etc.

28. Please state expenditures and losses incident to the epidemic, as follows:

a. The value of time lost by those sick with disease, (one dollar per day would perhaps cover it.)

b. Cost of medical attendance, medicines, nursing the sick, etc.

c. Cost of funerals.

d. Cost of sanitary work, including expense of quarantine.

e. Value of bedding, clothing, etc., destroyed.

f. Loss of profits on the expenditures abroad of refugees.

g. Local commercial losses by interruption of business and diversion of trade, etc.

A copy of the following circular was sent to the Mayors of between two hundred and fifty and three hundred towns in the State:

OFFICE OF MISSISSIPPI STATE BOARD OF HEALTH,
JACKSON, MISS., March, 27, 1879.

Dear Sir:

The sickly season is fast approaching, and we regard it of great importance that the authorities of every town in the State should establish a Board of Health, and adopt such sanitary regulations as would tend to protect the health of their citizens. Section 19, of an Act amending the Act creating a State Board of Health, (see page 137, Laws of 1878,) gives you the authority to create a Board.

Should your town already have a Board of Health, please have the kindness to furnish me the address of the President. Should you establish one, please request them to report to this office as soon as they are organized.

Very respectfully yours,

WIRT JOHNSTON, M. D.,
Secretary Miss. State Board of Health.

In order to get our State in the best possible sanitary condition for the approaching summer, the following circular, prepared by Dr. Robert Kells, was freely distributed.

CIRCULAR.

At the last meeting of the State Board of Health, held at Aberdeen on the 5th day of April, it was declared by resolution, that the undersigned should prepare a circular letter, to be issued to the different sanitary bodies and the municipal authorities throughout the State.

The recent epidemic, with all of its horrors, must be fresh in the minds of us all, and it ought to suggest, with special emphasis, the necessity of adopting such sanitary measures as shall greatly diminish, if not wholly exempt, from the scourge of epidemics.

We can safely start with the postulate that a normal atmosphere is the most favorable condition for man in health and disease. How often does the safety of the patient depend upon it? Our therapeutics frequently prove painful failures until we send them to some favored locality, where the lungs may be fed upon this blood-purifying gas, until the blood corpuscles shall be restored to their wonted number and vital integrity.

No sanitarian will question that filth, with all its chemistry for evil, not only gives rise to many forms of disease, which often grow into the magnitude of epidemics, but that it dangerously affects all other diseases, produced by *materies morbi*, distinct and different.

It stands to-day a well attested fact, that foul air diseases are preventable and prevented when proper hygienic requirements have been enforced.

With the encouragement and experience of the past, are we not compelled to the conclusion, that it is a matter of supreme importance to give careful attention to the removal of any and all causes about us that will produce miasmatic and infectious exhalations?

Many foci of these gaseous poisons may be found in cities and towns,—in the ill-constructed sewers, basins of stagnant water, surface water, privies, barn-yards, etc. Sewer gas is considered far more dangerous to public health than any of the causes that usually surround us, for in addition to the dead products of fermentation, we have in sewer gas, germs of minute fungoid animals and plants, when, finding a suitable nidus, have an immense power of self-production.

Diphtheria, scarlatina and the worst forms of our low grades of fevers are the product of our silent and hidden laboratory of these sewers.

These prolific sources of disease have been so much neg-

lected in our sanitary work, that I have thought it proper to direct special attention to these tunnels for the discharge of water and filth.

We trust that the County and Municipal Boards of Health may be profoundly impressed with the importance of at once making a proper survey of their respective districts and localities to discover any and all causes dangerous to public health, to have the same abated, and all suspicious places thoroughly disinfected in order to destroy germs and miasms. It is at this point that disinfectants can be used with the most reliance, to abort disease and their spread into epidemics. To preserve health and life is one of the highest employments that can engage our attention, and we as the ministers of public health should contribute our best endeavors to secure these wise and beneficent ends. The well directed efforts of the Health Service of Great Britain has so improved the sanitary condition, and consequently the physical condition of her population, as to have diminished her death rate one-third in comparatively a very few years. Then do not let us temporize, and disregard our obligations until some tempest of death comes to remind us of our wilful insufficiency. We shall then be called again to witness that our improvised efforts, and the use of disinfectants will prove a poor if not a fatal dependence to arrest the march of the destroyer. Disinfectants cannot be used in sufficient quantity (without becoming a source of danger) upon the eruption of any fatal epidemic, to neutralize the life destroying germs and gases arising from a city saturated with filth.

Then let us "put our house in order," and accept the hopeful and helpful suggestions of experience, that the bane and pain of all our ills are greatly mitigated by the renewing influences of a pure atmosphere. Cleanliness is the brightest temporal ornament to any people, for it means health and prosperity with all their multiplied blessings.

We are disappointed that so many counties have failed to organize Boards of Health. We had hoped that all measures instituted for the conservancy of the health of our citizens would command the attention of the leading electors of each and every county in the State. We must agitate this public health question until we shall have evoked such a sentiment in the public mind as shall demand a sanitary as well as civil administration.

We again renew our desire to have the cordial co-operation of the County and Municipal Health Boards in the State, that we may mutually aid each other in the responsible duties we have assumed in furtherance of public hygiene.

May we not fairly hope to be saved from "the pestilence that walketh in darkness, and the destruction that wasteth at noonday," if we intelligently obey the laws that sanitary science

points out to us, and thereby secure such a measure of cleanliness as will secure its own reward.

ROBERT KELLS, M. D., Chairman.

The following circular on disinfectants was at the same time also freely distributed:

DISINFECTANTS.

The following resolution was adopted by the State Board of Health:

Resolved, That while we do not advise the disuse of the popular disinfectants in purifying the exhalations from cesspools, privies and other foul accumulations, we desire to announce the fact that observation and experience in the late terrible epidemic, do not demonstrate their efficacy and reliability in destroying the germs or cause of yellow fever.

The object of disinfection is to prevent disease. It is known that certain diseases are the result of an infective poison; and it is also known that this infective poison has a close connection with the decomposition of animal and vegetable matter.

Cleanliness, pure air, pure water, good food and proper clothing are great safeguards against infectious diseases. Artificial disinfectants cannot be made to supply the place of these essential conditions of personal and public health.

Hence the first rules against infection are:

1. That no house refuse, filth, excremental matter or foul dirt, producing noxious gases, should be allowed to remain about inhabited premises.
2. That all occupied dwellings should have an abundant and uninterrupted supply of pure fresh air.
3. That all water used for cooking and drinking shall come from uncontaminated sources.

Some diseases are capable of rapid increase and multiplication in filthy, foul and damp places; hence all unclean and damp places about dwellings, places of business and places of public gatherings should be cleansed and dried.

Disinfectants are naturally divided into three classes:

1. *Those which chemically destroy or effectually restrain the contagious and infectious virus.*

The principal of these are *heat, nitrous acid gas, sulphurous acid gas, bromine, sulphate of iron, sulphate of zinc, chlorine and ozone.*

2. *Agents that arrest chemical change and check the fermentive process—antiseptics.*

They embrace most of those enumerated in the first class, the most important of which are *nitrous and sulphurous acid*

gases, carbolic and salicylic acids, chloride of zinc, chloralum, bromo chloralum, sulphate of iron and perhaps thymol.

3. *Deodorants and absorbents—agents that destroy putrid exhalations and physically restrain noxious compounds.*

The principal of these agents are *dry earth, charcoal, quick lime and chlorine.*

From the long list of disinfectants the following have been selected, as it is believed they will meet all ordinary demands:

1.—FRESH STONE LIME.

Application.—To absorb moisture and putrid fluids.

How used.—Pulverized and scattered over places to be dried. In damp rooms it should be placed in pans in liberal quantities. Mixed with water, it is used to lime-wash walls, and ceilings. It is useful when spread over heaps of fresh manure as a preservative.

2.—CHLORINATED LIME.

Application.—To destroy putrid gases and check putrefaction.

How used.—A solution of *chlorinated lime* made by straining and decanting a gallon of water into which a pound of the lime has been dissolved is a good disinfectant fluid to use in washing the bodies of those who have died of small-pox, cholera, scarlet fever and other diseases. It is a good solution to use in the sick room for cleansing the hands of the nurse, and into which small articles can be immersed which are awaiting an opportunity to be boiled.

To generate *chlorine gas,* pour strong vinegar or dilute sulphuric acid upon chlorinated lime placed in pans in the room. Or, place in an earthen vessel four ounces of peroxide of manganese and pour upon it one pound of muriatic acid.

Chlorine gas is regarded as an efficient disinfectant, but it must be *efficiently applied.* It is very efficient in disinfecting confined or infected atmosphere and porous substances. Its rapid diffusion and power of penetration are great. It destroys sulphuretted hydrogen, ammonia, and all fetid organic compounds. Its odor penetrates far beyond its power as a disinfectant, hence its real degree of influence may be deceptive. It can appropriately be used in disinfecting foul cellars and rooms unoccupied.

3.—DRY EARTH.

Application.—To absorb effluvia from decaying animal and vegetable matter, and appropriately human excreta.

Dry earth is nearly a complete disinfectant i used in suffi-

cient quantities to absorb all moisture. It is especially applicable to the deodorizing of privy contents, where the basin is shallow, with a limited quantity of fluid. It should be abundantly applied.

4.—SULPHUROUS ACID GAS.

Application.—To disinfect rooms and infected clothing. Applied only in case of unoccupied rooms. To be effectual in destroying disease germs, the fumes must be so strong that they would destroy human life.

Can be used in disinfecting rooms and clothing after cases of *yellow fever, small-pox, scarlet fever, cholera and typhoid fever.*

Sulphurous acid has long been esteemed as a powerful disinfectant. It is to be preferred to *nitrous acid* or *chlorine gases*, because of the great irritation these latter produce upon the mucous membrane of the air passages when inhaled.

These gases should only be used under the direction of a competent physician.

How used: Place in an earthen vessel or iron kettle containing a small quantity of ashes, a few live coals, upon which place from one to four pounds of sulphur, in powder or fragments, according to the size of the room. One and one-half ounces is the proper quantity to each 100 cubic feet of space.

To guard against accident by fire, it is well to place the vessel on some fire-proof article or suspend it over a tub of water. As soon as the sulphur is ignited, the room having previously been rendered tight, should be closed and remain closed for twelve or twenty-four hours.

Ventilation, and painting the wood work, white washing and re-papering the walls. will complete the process, and fit the room for re-habitation.

5.—SULPHATE OF IRON (Copperas.)

Application.—To disinfect privies, cess pools, drains, sewers, and all vessels and places receiving the discharges of the sick. It decomposes the sulphuretted hydrogen and the ammonical compounds so poisonous and offensive in privy vaults.

How used.—Dissolve eight or ten pounds of the copperas in eight or ten gallons of water. Add to this solution, one pint of the impure carbolic acid. The solution will be rendered more complete if hot water is used. A privy which accommodates an ordinary sized household will require at least one-eighth of this quantity twice every week during the hot summer months. Masses of filth in privies, sewers or drains should be thoroughly saturated with it, at brief intervals, until all offensive odors are gone.

6.—CARBOLIC ACID.

Application.—Mixed in the proportion of one part acid to from forty to one hundred parts water.

How used.—In solution in water of varying strength, according to the purposes to which it is to be applied. It is especially adapted to disinfect *sewage, foul grounds, drains, sinks, foul heaps of manure or garbage, stables, privies* and the air of foul places. On account of the offensive odor of the impure it would be better to use the pure acid.

7.—HEAT.

This may be applied as *dry air* or *boiling water, or heated steam.*

Dry Air.—Hot dry air is the most powerful and complete disinfectant. It chemically disorganizes noxious substances, and by producing thorough dessication, prevents putrefactive change.

It also sets in motion atmospheric currents which mechanically dissipate morbific agents. It has been proved that a temperature of 212 degrees Fahr. destroys the virus of smallpox; one of 200 degrees that of scarlet fever, and that vaccine virus being subject to a temperature of 140 degrees becomes speedily inert.

In the use of *dry heat* two things are to be observed:

1. That the heat shall be equally distributed throughout the fabric so as to secure safety in all its parts.

2. That the temperature shall not be raised so high or continued so long as to destroy the fabric.

A temperature of 240 degrees or 250 degrees should be employed. This degree of heat can be applied to white woolen fabrics, linen, cotton, silk and paper, for two or three hours without danger. A longer time produces discoloration. An oven, cautiously heated, may be used to disinfect small articles.

Such articles or infected garments as will admit of being *boiled,* should be subjected to this process for at least two hours. Until such a process is commenced, all infected articles should remain immersed in some of the disinfecting fluids already mentioned.

For infected substances and garments that may be destroyed, *heat to destruction* should always be used.

8.—FRESH AIR, PURE WATER AND SUNLIGHT.

These are God's free gifts to all. These benign and conserving agents are always at command. They have no substitutes. Accompanied by an even temperature they promise all that is needed, in most cases, in the sick room.

There are a number of other disinfectants. Among them may be mentioned *pulverized charcoal, nitrous acid fumes, permanganate of potassium, chloralum, bromo chloralum, chloride of zinc, sulphide of zinc, sulphate of zinc, iodine and oz one*

It is suggested that the graves of those who died of yellow fever be covered with fresh stone lime and re-mounded.

NOTE.—Most of the foregoing has been gathered from an article on disinfectants, by Dr. E. L. Griffin, President of the Wisconsin State Board of Health, and published in the second annual report of that Board.

A copy of the following was sent to each local Board of Health in the State:

OFFICE OF SECRETARY STATE BOARD OF HEALTH,
JACKSON, MISS., May 13, 1879.

DEAR SIR: We respectfully request, should a case of yellow fever occur in your vicinity, that you will at once inform this office by *telegraph*, and if any other infectious or contagious disease should appear, to immediately inform us by letter. It would be important for us to be in possession of such information.

Similar information received by us from other localities will be promptly furnished your Board.

Very respectfully yours, WIRT JOHNSTON, M. D.,
Secretary State Board of Health.

In June a letter was addressed to the Attorney-General, soliciting his opinion as to the powers of Boards of Supervisors and the authorities of incorporated towns, over railroads, in enforcing quarantine, and his reply was distributed to the health authorities in the State.

The following circular letter was sent to each County Board of Health:

OFFICE OF MISSISSIPPI STATE BOARD OF HEALTH,
JACKSON, MISS., June 16, 1879.

President of County Board of Health:

DEAR DOCTOR: While we know of no special cause for alarm now, still we cannot feel confident that we will not have another epidemic visitation this summer. I would, therefore, earnestly recommend that your Board prepare now to prevent the introduction of yellow fever into your county by drafting a quarantine ordinance and getting your Board of Supervisors adopt it, so that you could on short notice enforce it if it becomes necessary.

Any information received at this office, of the existence of yellow fever, will be promptly furnished you.

Section 2739, Revised Code of 1871, confers the power to establish quarantines on the Boards of Supervisors, but it occurs to me they could adopt an ordinance and authorize your Board to enforce it, and furnish you the necessary assistance to do so. The experience of last year fully demonstrated the efficiency of quarantines in preventing yellow fever, and it must be remembered that your county would be in danger of becoming infected, should only a few cases of the disease exist at some point with which you are in communication, before the disease has been declared epidemic. One person or a single package of goods from an infected household or locality might introduce the disease.

I make no suggestions as to the details of your Quarantine Ordinance, as I know your own judgment will dictate the measures to be adopted. Suffice it to say, that to be efficient, a quarantine must necessarily be rigid and the rules inflexibly adhered to.

Please also call the attention of the authorities of the towns in your county to the importance of making the necessary preparations.

Very truly yours,

WIRT JOHNSTON, M. D.,
Secretary and Executive Officer of the State Board of Health;
and Chief Health Officer of Mississippi.

A similar communication was also sent to each municipal Board of Health and to the President of the Board of Supervisors in counties having no Board of Health.

Yellow fever having made its appearance in the city of Memphis in epidemic form, on the 21st of July, circulars were sent out advising quarantines against that city.

Cases of yellow fever having occurred in the city of New Orleans, on September 3d, quarantines against that place were advised.

Soon after the adjournment of the Board in July, the Executive Committee met and proceeded to arrange for the establishment of State quarantine stations under the authority and by the assistance of the National Board of Health, as determined upon by the State Board.

The following circular was prepared by the committee appointed for that purpose and freely distributed:

OFFICE OF MISSISSIPPI STATE BOARD OF HEALTH,
JACKSON, MISS., Aug. 8th, 1879.

To the People of Mississippi:

The State Board of Health, this day assembled in called

meeting, appointed the undersigned a committee to advise the public of its action on the subject of quarantine against yellow fever, and solicit the aid and co-operation of local Boards of Health, and citizens generally, in executing the measures adopted.

Being alive to the importance of quarantine stations on the main lines of travel at points on the borders of the State nearest infected localities, and being entirely without means for their establishment, the State Board, through its efficient President and Secretary, appealed to the National Board of Health for the necessary financial assistance. This, we are happy to say, was promply granted.

Our Board, therefore, proceeded to select four quarantine stations, as follows: One at Osyka and one at Michigan City, on the Chicago, St. Louis & New Orleans Railroad; one at Fort Adams and one at Commerce, on the Mississippi river. A fifth is contemplated at Corinth, provided it meets the approbation of the National Board. It will be observed that two of these stations are designed to protect us against New Orleans and three against Memphis—these being the only infected places at present.

Each quarantine station will be under the control of a competent medical officer, who will be provided with a full corps of subordinates, and the necessary tents, furniture, provisions disinfectants, etc. These stations are expected to continue three months, unless all danger sooner disappears, and can be moved to different places as circumstances may demand. They will be conducted in accordance with the Rules and Regulations issued by the National Board, and adopted by the State Board of Health of Mississippi; and it is desirable that County and Municipal Boards of Health should adopt these Rules, that harmony and concert of action may characterize all of our efforts to keep the dreaded scourge from our borders.

The 15th Section of these rules (which is as follows: "No train having a certificate of such inspection, and no passenger having a proper certificate that he was free from disease, and that his baggage, etc., was properly disinfected, shall be interfered with by any municipal or other local systems of quarantine,") has been modified by the Mississippi and other State Boards of Health, so that in cases of imminent danger quarantine officers can exercise control over trains, passengers and baggage coming from a yellow fever atmosphere, and having the certificate mentioned. But it is hoped and believed that this necessity will seldom arise, and that the Rules of the National Board, if faithfully carried out, will be adequate to the perfect protection of the people of our State.

As some confusion and danger has arisen in the past by unauthorized and forged certificates of health and non-infection, it is thought advisable that such certificates in future should

have the impressed seal of any State or County officer on its face.

We will state that it is the purpose of our State Board of Health to employ all of their limited powers, and constantly exercise their best judgment, sagacity and skill in protecting our people against another invasion of the deadly fever, which last year swept away more than five thousand of our citizens, and entailed an amount of human anguish and financial loss that are impossible to estimate. All other questions pale into utter insignificance compared with that of protection against such an enemy of mankind as epidemic yellow fever.

In conclusion, we bespeak the sincere thanks of every true Mississippian to the National Board of Health for the timely and liberal appropriation of funds for our benefit.

S. V. D. HILL, M. D.,
E. P. SALE, M. D.,
Committee.

Finding that the liberal appropriation made to us by the National Board of Health was sufficient to enable us to do so, it was decided to establish a fifth Station at Corinth.

Quarantine Officers were appointed and assigned to duty as follows:

Dr. W. C. Warren, Osyka Station.
Dr. J. M. Taylor, Corinth Station.
Dr. C. A. Rice, Polk's Landing, near Commerce.
Dr. E. L. McGehee, Fort Adams Station.

Dr. Geo. E. Redwood had previously been appointed by the Board and assigned to duty at the Michigan City Station.

These officers were authorized to select their own assistants with the exception, that the Executive Committee appointed the Sanitary Policemen at the Corinth and Fort Adams Stations.

When the Board met on August 8th, it was believed that the trains had stopped running on the Mississippi & Tennesse Railroad, and in consequence, a Station was not needed on that road. Subsequently, however, I was informed that the trains had not stopped running, and I accordingly telegraphed the National Board of Health, asking for the means to establish another Station.

On August 25th, an answer was received authorizing it, and Dr. H. J. Ray was appointed a Quarantine Officer, and instructed to establish a Station at Horn Lake, as soon as practicable.

These Stations were governed by the Rules and Regulations recommended by the National Board of Health, and were provided with the necessary assistants, and equipped for the accommodation of persons both sick and well.

They went into operation on the following dates:

Osyka Station, August, 14th.
Michigan City Station, August ——.
Corinth Station, August 19th.
Polk's Landing Station, (near Commerce,) August 23d.
Fort Adams Station, August 25th.
Horn Lake Station, August 30th.

On October 7th, orders were issued discontinuing the Stations against New Orleans, as they were no longer regarded necessary, and accordingly the Osyka Station was formally broken up on October 8th, and the Fort Adams Station, on October 12th.

On November 1st, all of the other stations, except Polk's Landing, were discontinued, they being no longer necessary. The Polk's Landing Station was not discontinued until the 7th of November, on account of the orders not having reached Dr. Rice until about that time.

On September 13th, a telegram was received from Dr. Pease, President of the Board of Health, announcing yellow fever at Concordia, in Bolivar county. Dr. M. S. Craft immediately started there as an Inspector of the National Board of Health.

On September 22d, by the authority of the National Board, Dr. E. G. Banks was sent there as an Inspector of this Board. He was furnished with full written instructions as to the isolalation of cases, disinfection and the establishment of a sanitary cordon around the town. It seemed to be a difficult matter to get communications from Concordia, and as no requisition was made on this office for anything, it was necessary to expend only a small amount of the money appropriated by the National Board of Health to prevent the spread of the disease from that place. I, however, shipped disinfectants and six tents there.

I am informed that there was only a slight spread of the disease from that point.

On September 28th, a telegram was received from Dr. F. W. Dancy, reporting yellow fever at Oak Grove, in Marshall county; and by the authority of the National Board of Health, Dr. Chesley Daniel started there on October the 1st, as an Inspector of this Board. Full written instructions were given him, and disinfectants were shipped to him. My information is, that the disease was confined to the locality in which it appeared.

A few cases of yellow fever occurred during the season in Harrison county.

The disease was also reported at Harrison Station, on the Mississippi & Tennessee Railroad, but telegrams were received from Grenada and Garner, stating that the sickness was believed to be due to lead poisoning. From a letter recently received from Memphis; it seems that there might have been some cases of yellow fever at Harrison Station.

With the exceptions mentioned, I am pleased to say, that so far as I am informed, no other cases of yellow fever occurred this year within the limits of our State.

It is proper that mention should be made of the liberality of the National Board of Health in making appropriations for the use of this Board.

On our estimates submitted for the establishment and maintenance of the four State Quarantine Stations originally contemplated, they allowed us $9,400 00 to equip and keep these Stations in operation for three months, or so long as might be necessary, and in response to our application for means to establish the Horn Lake Station, they appropriated $4,000 00 for that purpose, and to establish two other State Stations, "should the fever escape control at Memphis," and it became necessary to do so.

When Concordia became infected, they telegraphed us that $5,000 00 had been appropriated to "stamp out" yellow fever there, or at any other point in Mississippi that might become infected, in accordance with circular No. 7 of that Board.

Thus it will be seen, being without money of our own, we were enabled to undertake a work which it is believed contributed, at least in part, to protect the people of Mississippi from yellow fever.

Of the amounts appropriated, between six and seven thousand dollars will have been expended when the few bills yet outstanding are paid. It is perhaps proper that I should add that the appropriations were made for specific purposes and could not be used for others than those indicated in the estimates—in other words we could not use the money except for the exact purposes for which it was appropriated.

It is also proper for me to state that we received no actuai money in our own hands, and that the disbursements were made at Washington by the Disbursing Agent of the National Board of Health, by checks on the Treasury Department. Each separáte account, whether for services rendered or articles furnished, after being sworn to by the person to whom It was due and being certified to as to correctness in this office, was sent forward, and if found correct, a check drawn payable to the order of the individual, covering the amount of his account was sent in return.

It should also be mentioned that the National Board of Health allowed the following amounts for the following places for quarantine purposes for one month: Vicksburg, $725 00; Jackson, $500 00; Meridian, $425 00.

The latter place, however, was the only one that used its appropriation.

REGISTRATION OF VITAL STATISTICS.

In regard to the registration of marriages, births and deaths I have to report that the work was commenced in the various counties on January 1st, and that returns have been received from most of the counties for the first two quarters of the year. From these returns it was discovered that the registration was not as full as was desired. There seemed to be a full registration of marriages, as the Circuit Clerks were themselves in possession of the necessary information to make the record, but the returns of births and deaths were incomplete on account of the failure of physicians and others to make the necessary reports to the Circuit Clerks.

The blanks for the reports of the third quarter, ending September 30th, were not sent to the Clerks, as it was regarded an unneccessary expense as the reports for the first two quarters were found to be valueless.

These statistics, unless full and complete, are of no value, for instead of furnishing the desired information they are apt to deceive. For this reason the reports received are not published.

Monroe county is the only county in the State where I have reason to believe a full registration has been approximated. The report of births and deaths in that county are published elswhere. The marriages are not published on account of the color of the parties not being stated in the report to this office.

Even with a law imposing a penalty for failure to report births and deaths to the Clerks, I am satisfied that some time would elapse before a full registration would be secured.

It gives me pleasure to state that the Circuit Clerks generally have manifested an interest in the work, and I take this occasion to tender them my thanks for the courtesy with which I have been treated.

It affords me pleasure to say that this year has been somewhat remarkable for the small amount of sickness in our State; even the common malarial diseases have been much less abundant than usual. The contrast with 1878 is indeed striking and pleasant.

The correspondence of this office is quite extensive, and during 1878 and 1879, we have issued upwards of 10,000 circulars and documents relating to sanitary matters, besides the numerous circulars, etc., relating to the registration of vital statistics.

Respectfully,

WIRT JOHNSTON, Secretary.

EXPENSES OF THE BOARD, 1879.

PRINTING AND STATIONERY FROM THE PUBLIC PRINTERS.

Feb. 12.	500 official envelopes	$ 4 50
Feb. 12.	50 circular letters to physicians requesting reports on yellow fever	4 00
Feb. 12.	50 memoranda for reporters	6 00
Feb. 28.	50 circulars to Circuit Clerks in regard to registration documents	1 50
Feb. 28.	50 No. 5 return envelopes (printed)	1 25
M'ch. 28.	300 circulars to mayors of towns relating to sanitary matters	3 00
April 11.	74 postal cards relating to vital statistics	2 00
April 16.	Ream letter heads for President and Secretary	6 50
April 16.	750 envelopes	6 00
Apr. 28.	250 reports of quarantine during the epidemic	6 00
May 13.	100 postal cards relating to yellow fever	2 50
May 23.	100 circulars relating to local boards	3 00
May 23.	500 4 page circulars on disinfectants	12 00
May 23.	250 circulars on sanitation by Dr. Kells, committee	6 00
May 23.	300 No. 10 envelopes	4 00
May 31.	80 reports county quarantine during epidemic	5 00
June 12.	300 circulars, opinion of Attorney General in regard to quarantine power	5 00
June 16.	100 circulars to Presidents County Boards of Health	3 50
June 20.	100 circulars to Presidents Municipal Boards of Health	3 00
June 23.	100 circulars to Presidents Boards of Supervisors	3 00
July 16.	300 circulars by Dr. Rice, President	5 00
July 21.	135 postal cards, 3 changes	3 00
Aug. 13.	500 circulars by committee of Board	6 00
Aug. 13.	500 envelopes, 4 changes to mayors and Boards of Health	4 00
Aug. 28.	½ ream letter heads	3 50
Aug. 28.	250 No. 6 envelopes	2 50
Aug. 28.	250 No. 10 envelopes	3 00
Sep. 3.	150 postal cards (printed)	2 00
Oct. 3.	250 No. 9 envelopes	3 00
	1 small journal furnished in 1878	1 50
	1 Record Index furnished in 1878	1 50
	Total	$122 75

We also received during the year one quart of ink and two letter copying books.

Expenses of members incurred in attending meetings 1879.

MEETING APRIL 5TH, AT ABERDEEN.

S. V. D. Hill	$ 6 00
Wirt Johnston	20 25
Robert Kells	20 95
A. G. Smythe	3 85
F. W. Dancy	15 00
J. M. Taylor	11 00
B. F. Kittrell	19 00
C. A. Rice	31 65
Total	$127 70

MEETING JULY 15TH, AT JACKSON.

S. V. D. Hill	$28 50
P. J. McCormick	13 50
B. F. Kittrell	15 50
J. W. Bennett	6 40
C. A. Rice	16 00
Geo. E. Redwood	15 00
Total	$94 90

MEETING AUGUST 8TH, AT JACKSON.

S. V. D. Hill	$ 27 50
J. W. Bennett	7 10
Geo. E. Redwood	14 50
C. A. Rice	9 50
E. P. Sale	30 00
R. G. Wharton	25 00
Total	$ 113 60

DECEMBER 1st, 1879.

WIRT JOHNSTON, Secretary, in Account with Mississippi State Board of Health.

1879	DR.
To cash on hand from 1878	$ 9 20
May 14. To amount from Auditor	20 00
June 26. To amount from Auditor	8 00
July 21. To amount from Auditor	31 96
Sept. 2. To amount from Auditor	56 00
Sept. — To amount refunded by Express Company, package from Chicago	1 00
Nov. 15. To amount from Auditor	20 80
	146 96
By amount due Secretary, to balance	1 02
	147 98

1879.		CR.
Feb. 27.	By postage	1 00
M'ch. 28.	By postage	3 00
April 8.	By Expressage on papers from Aberdeen	1 25
April 12.	By postage	50
April 17.	By postage	60
April 25.	By Expressage on Board of Health report from New York	50
May 1.	By postage	30
May 2.	By postage	25
May 6.	By telegram	95
May 7.	By postage	1 00
May 12.	By postage	1 00
May 14.	By postage	2 00
May 20.	By postage	28
May 31.	By postage	2 00
June 6.	By Expressage on package from Chicago	1 80
June 10.	By postage	84
June 17.	By postage	2 00
June 24.	By postage	1 10
June 26.	By postage	1 20
June 27.	By amount handed Dr. Rice, President	15 00
July	By Post Office account	1 87
July 21.	By postage	1 37
July 22.	By telegrams	30 59
July 30.	By telegram	45
July 2. and 30.	By postage	3 55
Aug. 1.	By telegrams	10 25
Aug. 4.	By telegram	85
Aug. 19.	By telegram	45
Aug. 25.	By telegrams	6 00
Aug. 25.	By telegram	85
Aug. 28.	By postage	1 00
Sept. 1.	By telegrams	27 50
Sept. 2.	By telegrams	1 30
Sept. 3.	By postage	2 10
Sept. 19.	By postage	2 00
Sept. 22.	By postage	2 00
Sept. 25.	By postage	2 00
Oct.	Post Office account	1 89
Oct. 3.	By telegrams	13 29
Oct. 10.	By telegram	1 10
Nov. 22.	By postage	1 00
		$ 147 98

C. A. RICE, M. D., President, In Account with Mississppi State Board of Health.

VICKSBURG, MISS., December 6, 1879.

Report of disbursement of State funds for State Board of Health purposes.

Amount of cash received of Dr. Wirt Johnston.....$15 00
Which was used for postage and telegraphing
Amount of warrant July 17th, 1879..... 32 50
Which was used for postage and telegraphing.
Amount of warrant July 21st, 1879..... 50 00
Which was used for postage and telegraphing
Amount of warrant July 16th 1879..... 94 90
Which was used in defraying expenses of members of Board at called meeting.

Respectfully submitted,

C. A. RICE, M. D.,
President State Board of Health.

VICKSBURG, MISS., December 6, 1879.

Personally appeared before me an acting Justice of the Peace, Dr. C. A. Rice, who being duly sworn, says the above account is just and true, and that the monies were expended for the purposes above set forth.

GEO. A. GRAMMER,
Justice of the Peace and Notary Public.

TOTAL EXPENSES OF THE BOARD IN 1878 AND UP TO DECEMBER 1ST 1879.

1878.

Meetings	$ 270 00
Printing and stationery	373 75
Telegrams, postage and expressage	151 79

1879.

Meetings to December 1st	$ 336 20
Printing and stationery	122 75
Telegrams, postage and expressage, expended by Secretary	147 98
Secretary's salary from March 1878 to December 1879	437 50
Telegrams, postage and expressage, expended by President	97 50
Total	$1,937 47

REPORTS OF

STATE QUARANTINE STATIONS, 1879.

OSYKA STATION.

In closing up this Quarantine Station, I have thought best, in making the last report to your office, to recapitulate the work from its commencement.

The inspections began August 14th, and continued until October 8th, inclusive. And during this time there were inspected eight Sunday excursion trains, running from New Orleans to McComb City, carrying in the aggregate about two thousand four huudred persons, of all sizes, sexes and complexions. These trains ran only sixteen miles into Mississippi and returned the same day. As the city was not declared dangerously infected at any time, I agreed with the railroad authorities, that the passengers might pass my station without certificates of health, provided all aboard were free from fever. I have the pleasure to report no one sick on any of these trains.

There were also eight accommodation trains. One each Saturday evening, running out as far as McComb City. These trains carried only about twenty persons each, making a total of one hundred and sixty, mostly business men, visiting their families, and holding health certificates. In addition, were fifty-five mail trains, and forty-seven mixed trains, carrying in the aggregate seventeen hundred persons. These persons with rare exceptions had health certificates, until the last week or so, when owing to the absence of fever in New Orleans, the issuance of them, I was informed by Dr. Henry Stone, was not considered necessary. It affords me much pleasure to say that my duties as inspector, though not regarded as urgent or necessary by the traveling public, yet they spoke of it as eminently proper during the first month, as a measure of precaution. And I cannot omit to mention the readiness of the railroad authorities to co-operate with the Health Board of the State, and the willing manner they displayed in offering every facility to me in the discharge of my duties as inspector of their trains.

I have in conclusion to reiterate my former reports. that I was so fortunate as to meet with no fever, all of which I re-

gard as the fruits of the vigorous efforts of the sanitary authorities of New Orleans in placing their "house in order."

Respectfully, W. C. WARREN,
Quarantine Officer.

FORT ADAMS STATION.

The Fort Adams Quarantine Station was established on the 25th of August, 1879; to prevent, if possible; the introduction by steamboat, of yellow fever from New Orleans into Mississippi.

It was located on east bank of the Mississippi river, five miles above the Louisiana State line; at the first good steamboat landing where there were no inhabited dwellings.

The Rules and Regulations of the National Board of Health, which are intended to prevent the spread in the United States of contagious or infectious diseases, were enforced. Every boat, with the exception of six, that could not be made to land that passed up the river, was boarded and inspected. The health of crew and passengers, the cleanliness, disinfection and ventilation of the vessel were carefully observed.

When the Sanitary regulations prescribed by the National Board of Health were complied with, a clean bill of health was given. Such haing been done in every case, there was not one "foul" health certificate issued.

New Orleans no longer being considered an infected port, the quarantine restrictions were removed on the 12th of October.

E. L. MCGEHEE,
Quarantine Officer.

COMMERCE STATION.

I have the following final report of the "Commerce Station" Mississippi State Quarantine, governed by the Rules and Regulations of the National Board of Health, and acting under their authority:

Number of boats inspected, 131.

Number of persons inspected, 8,453.

I arrived at my Station August 23d, left November 7th; arrived at home November 12th.

I did not meet with any yellow fever in all my inspections; demonstrating the vigilence of the Memphis authorities in preventing egress as well as ingress.

The past season has assured the people that quarantine is

the only effectual barrier known to the progress of yellow fever, and they confidently look forward to it as their only deliverance from the dreaded scourge.

C. A. Rice,
Sanitary Inspector.

HORN LAKE STATION.

The Horn Lake Station was established on the 30th day of August, 1879, near the State line, on the Mississippi & Tennessee Railroad, two miles above Horn Lake and about nine miles from Memphis. The equipment of the Station was as follows: Myself as Chief Officer, Henry Hayden as cook; stove and its utensils, ax, spade, table and crockery, four tents, eight cots, four mattrasses, eight pillows and cases, sheets and four blankets. An assistant Sanitary Policeman was not needed. The Station was operated under the Rules and Regulations as recommended by the National Board of Health.

Number of trains inspected 18.

Number of persons inspected 5.

Two of the above number of persons had proper certificates; the others did not have them, and after refusing to undergo quarantine, were permitted to return.

The quarantine restrictions of De Soto county permitted only two trains a week; and owing to the restrictions around Memphis and different places along the road, coupled with the fact, that they had to undergo quarantine at the State line, rarely any one ever came down.

All trains possessed proper certificates relating to the transfer of freights and passengers.

The transfer Station was located at White Haven, Tenn., just one mile above my Station.

The Station was discontinued on the first day of November.

H. J. Ray,
Quarantine Officer.

CORINTH STATION.

Having been appointed Quarantine Officer by the State Board of Health, with instructions to establish a quarantine station on the Memphis & Charleston Railroad, west of Corinth, in Alcorn county, I examined the line of the road for several miles out, but found it difficult to secure a location with suitable water and other facilities, except a place near the

corporation line of the town, and as this point was not near any house I selected it, and with the aid of Mr. C. A. Lusk, my efficient assistant, erected four tents and made every preparation necessary for the reception and treatment of any cases of contagious or infectious disease that might be found on the railroad trains. On entering upon my duties I notified the General Superintendent, Capt. John A. Grant, of the Memphis & Charleston Railroad, of my position and purposes, and requested his co-operation. I take much pleasure in bearing testimony to his prompt response, and to his uniform courtesy and cheerful compliance with every request made of him. I desire to add that all the employees of the road showed the utmost respect for this station, and seemed to desire to make the duties as efficient and agreeable as possible. The local quarantine officers of Corinth have heartily co-operated with this station, and I have relied upon them to enforce any restraints which might have become necessary in the discharge of my duties, where I had not the legal authority to do so myself.

I commenced the regular inspection of all East bound trains on the 19th day of August. My plan was to endorse all health certificates which I approved. The most important fact, and one which diminished the duties and responsibilities of this station incalculably, was the course pursued by the Memphis & Charleston Railroad in stopping all trains at Moscow, about forty miles from Memphis, and in restricting all travel to one particular train, which passed twice daily, except for the last two or three weeks, that passengers have been allowed to travel on all trains, and for the last few days trains have run into Memphis. With the trains thus stopping forty miles this side of Memphis, and the intervening country vigilantly patroled through the Tennessee State Board of Health, we have had a practical non-intercourse which has made it next to impossible for the yellow fever to get out this far. It seems to me that the plan of the National Board of Health, properly supplemented by State and local Boards, can be made successful in giving the largest amount of protection with the least amount of interference with the business interests of the people. The utmost precaution should be used in regard to passengers, baggage, freights etc., leaving an infected locality, and also on their arrival at the first transfer station; then I think competent and faithful inspectors should travel on every train passing between the first and second transfer stations, who would thus have ample opportunities to detect any errors or oversights in the inspection of those who preceded them. This second transfer station should be a depot, or headquarters of inspectors, who should serve as an outer wall of protection to the outside pnblic. Beyond the second transfer station little

more would be required than a vigilant policeman, at the various depots, such as we have had at Corinth since the establishment of this station.

The more intelligent and thoughtful of our citizens sustain the quarantine system as devised and practised by the National and State Boards of Health.

It is hardly necessary to add that no suspicious case of fever has presented itself on the trains, and consequently there has been no necessity to detain any one. We carefully inspected every train eastward bound. Passengers were almost invariably provided with certificates showing that they had not been in any infected locality, until the season was far advanced, when they became more negligent, and for the last three weeks not more than fifty per cent. have had any certificates at all. We have had more trouble with the indefatigable "drummer" than any other class of travelers.

According to orders, we this day close this station and ship to your address our quarantine camp equippage. Please find enclosed an inventory of articles shipped.

J. M. TAYLOR, M. D., Officer.

REPORT OF THE FEVER AT CONCORDIA.

In compliance with request of the State Board of Health, I visited Concordia, as Sanitary Inspector, on the 10th of October.

Concordia is a small village of about two hundred inhabitants, (a majority of whom are colored,) situated on the east bank of the Mississippi river, in Bolivar County, Mississippi, about two hundred miles by river above Vicksburg.

The soil of Bolivar county is entirely alluvial, and several feet above the level of the high water of the Mississippi river, but is protected from overflow by a levee from ten to twelve feet in height; the drainage is entirely surface, the surplus water running back from the higher lands, which are near the river, to the lakes and lagoons which are numerous in the interior.

There are no special local causes which might be assigned for the production or propagation of yellow fever at Concordia, which do not prevail in an equal degree at most of the towns and villages situated on the Mississippi river, south of Memphis; the entire region is malarial, but the singular fact is now well established, that when yellow fever prevails in this latitude, we are much more exempt from malarial attacks than at other times.

There are several theories in regard to the origin of the disease which prevailed with such violence in Concordia this

fall; but they all point to Memphis as the source of infection. Large shipments of goods were made from Memphis to Concordia, as late as the 14th, 19th, and 23d of July, while yellow fever was prevailing in the former place. Many of these goods were well caleulated to act as fomites; besides many parties came into Concordia from Memphis about the same time; amongst others, a young man left Memphis on the 23d of July, came to Concordia, and occupied a room with Geo. Tobin, his trunk was unpacked and his clothing was hung up in this bedroom. Geo. Tobin was the first pronounced case of yellow fever, and in my opinion, this trunk was the Pandora's box, which contained the germs of the fatal pestilence.

Up to the time of my arrival at Concordia, October 10th, there had been fifty-six cases of fever and nineteen deaths; a rigid quarantine preventing ingress or egress had been kept up, and Dr M. S. Craft, Inspector National Board of Health, who had been sent to Concordia as soon as the fever had been pronounced, had used his best efforts to prevent the spread of the disease, by isolation as far as possible; disinfection and fumigation.

The type of the disease was not materially different from that which prevailed in Vicksburg in 1878. Suppression of urine was perhaps a more frequent concomitant of the fatal cases; all the remedies recommended for that fatal symptom, except electricity, were tried without avail.

The material furnished by the State Board for disinfecting and fumigating, consisting of sulphur, sulphate of iron, and zinc solution, were ample in quantity and perseveringly used; the dead bodies were wrapped immediately after death, with a sheet, wet with the zinc solution and buried, generally within an hour; the bed and blankets were burned, and the room, and when possible, the whole house thoroughly fumigated for hours with sulphur. A solution of sulphate of iron was freely applied to privy vaults and filthy localities.

By 23d of October, having had two good frosts, the disease seemed about at an end, although one case occurred as late as November 1st.

As the working force had been very much reduced, and demoralization and recklessness had followed as a necessary sequence to the great mortality, less attention had been paid to general disinfection and fumigation than in the earlier stages of the epidemic, and I conceived it my duty to organize a corps to thoroughly cleanse and disinfect all suspicious and dangerous places, so that the seeds of the disease should not be kept over for another season; I had been engaged in this work two days, at an expense of ten dollars a day, when I received a dispatch from Secretary State Board (October 3d,) which informed me that the National Board had not author-

ized such work, and as the epidemic was at an end, I was relieved from duty.

Total number of cases, which occurred at Concordia..... 74
Whites..... 36
Blacks..... 38

Total deaths..... 28
Whites..... 21
Blacks..... 7

All of which is respectfully presented.

ED. G. BANKS,
Inspector State Board of Health.

REPORT OF THE FEVER AT OAK GROVE.

I arrived at Oak Grove on the night of Oct 1st, 1879. On the morning of the 2d I called on Dr. Wingo, resident physician, and accompanied him to Mrs. Bailey's, where the fever, which I was sent to investigate, had prevailed. Mrs. Bailey's family, previous to the fever, consisted of herself, Mrs. Manning, Miss Fannie Bailey and John Bailey, children of Mrs. Bailey; Miss Rilla and Willie Manning, children of Mrs. Manning; Charles and Andrew Campbell, and a two-year old Bailey boy, grand-children of Mrs. Bailey. I found John Bailey and Charles Campbell just convalescing from the fever, both of whom were attacked on September 25th. Miss Rilla and Willie Manning had died; the former was attacked September, 17th, and died September 20th; the latter was attacked September 20th, and died September 25th.

The little boy was the first to have the fever, having been attacked about September 1st. He recovered. Miss Fannie was sick about the time of the attack of the Manning children, and it was supposed she had the prevailing fever, but it was proven afterwards that she had not, as she was attacked with it October 26th, the day after my departure from Oak Grove. No notes were taken of these cases, but the symptoms as I could gather, were about as follows: The attacks were ushered in with a chill, followed by a temperature ranging from 102½° to 104.° The fever continued in each case about seventy-two hours, there being a sudden cessation at the end of this time. There was excessive pain in the head, with a feeling as if an iron band were tightly fixed around it, eyes suffused, pain in back, a dark colored discharge from bowels of those who died, a hæmorrhagic tendency of gums in case of little boy, restlessness and delirum in several of the cases. From what I could learn, there was no black vomit in the fatal cases.

After my arrival, Mrs. Manning was the first of those yet unattacked, to take sick. She was taken October 5th, with a

chilly sensation. Did not let Dr. Wingo and myself know of her illness till the evening of the 7th. At that time, had a temperature of 103.° Wednesday morning, 8th, had a temperature of 103;° tongue covered with a white coating. Thursday morning, 9th, temperature 102½.° Friday morning, clear of fever. She made a slow though good recovery. The next to get sick was Andrew Campbell, on October 9th, who recovered. The next to take sick was Mrs. Bailey, on Sunday October 19th. She made a good recovery.

Miss Fannie Bailey who, it was supposed, had the fever among the first, was attacked October 26th, the day after my departure, and as I learned by letter was not expected to live but finally recovered. As to the source of this fever it is uncertain. Miss Bailey, grand-daughter of the old lady mentioned in this report, and who lives about a half a mile from the latter, was married September 4th, to a Mr. Flinn, from Olive Branch, in DeSoto county, about eight miles from Oak Grove. There was an infair on the night of September 5th at Flinn's, and it was here that Miss Manning, who was in attendance, was in company with a young man who, it was said, had been handling goods from Memphis, This same young man mingled generally with the crowd. This is one supposed source.

A man by the name of Lenahan, an Irishman, living a short distance from Mrs. Bailey's, went to Memphis in July, and returned about the 28th of that month. This man had a child to die about August 20th, with what Dr. Wingo pronounced bronchitis. Miss Fannie Bailey on the day of the death of the child, and for the first time, went to Lenahan's, where she remained but a short time, perhaps not more than two hours. Other neighbors were with the child from the beginning of its illness. After this, about September 1st, the little Bailey boy mentioned above, and of whom Miss Fannie Bailey had special charge, was taken with a peculiar fever, said to be of the same nature as the cases already described in this paper. This is another supposed source, it being conjectured that the Lenahan child died of yellow fever, contracted from its father who had been to Memphis nearly one month before.

On July 8th, Andrew Campbell, was in Memphis, where he purchased a bolt of bagging and some groceries. The bagging was just off a boat, and was taken from the dray to the wagon on which it was brought to Mrs. Bailey's. This bolt of bagging was put in an upper hall at Mrs. Bailey's as soon as it arrived, where it remained till Miss Manning's death. This is another source from which it is supposad this fever may have originated. Mr. Bailey, father of the young lady whose marriage has been mentioned, bought a bolt of this same lot of bagging, at the same time, with a part of which

he carpeted his dining-room floor, which room was kept closed except at meal time, and none of his family were sick.

As to local causes, I could find but one which might cause disease, and that was a large pile of decaying sorghum cane, which was run through the mill and left on the ground last year. This pile was about seventy-five yards north-east of the house. The drainings from this pile flowed into a pool about fifty yards further north; this pool was in a drying up condition, containing a little stagnant water and a good deal of mud. Could this have been a source of disease to this family and not to those in neighboring houses, the nearest being a few hundred yards distant?

I would state that this disease was pronounced yellow fever by Dr. Winn, Sanitary Inspector from Memphis; by Dr. Smith from near Collierville, Tenn., who has had a good deal of experience with the disease, and by Dr. Wingo, resident physician at Oak Grove. I am not prepared to say positively, it was yellow fever, on account of its uncertain origin, though in some respects it did resemble it. It was a fever of one paroxysm.

CHESLEY DANIEL, M. D.,
Sanitary Inspector.

MONROE COUNTY.

Report of Deaths for the three-quarters, ending September 30th, 1879.

CAUSE OF DEATH.	Total.	White.		Black.		Mulatto.	
		Male.	Female.	Male.	Female.	Males.	Female.
All causes	76	25	21	13	13	2	2
Apoplexy	..	....	....	....	1	....	....
Assassinated	..	1	....	....	..	....	....
Amyloid degeneration of liver	..	1	....	....	....	....	....
Cebro-spinal meningitis	..	1	1	....	....	....	....
Convulsions	..	....	1	1	....	....	....
Congestion	..	....	1	....	....	....	....
Carbuncle	..	1	....	....	....	....	....
Capiliary bronchitis	..	....	....	1	....	....	....
Congestion of brain	..	....	1	....	....	....	....
Diarrhœa	..	2	1	..	....	....	....
Diphtheritic croup	..	....	1	....	....	....	....
Debility, (general)	..	....	1	....	....	....	....
Diphtheria	..	....	1	....	....	....	....
Hydrothorax	..	....	1	....	....	....	....
Inflammation of brain	..	....	....	....	....	1	....
Killed by lightning	..	1	....	....	....	....	....
Malarial hæmaturia	..	....	1	....	....	....	....
Malarial fever	..	....	....	1	....	....	....
Metritis	..	....	....	....	1	....	....
Pneumonia	..	10	3	3	6	....	....
Pernicious fever	..	1	....	....	....	....	....
Phthisis	..	1	3	1	1	....	2
Pertussis	..	....	....	1	2	....	....
Pleuritis	..	1	....	....	....	1	....
Paralysis	..	....	1	....	....	....	....
Premature birth	..	....	1	....	....	....	....
Poisoned with opium	..	....	2	....	....	....	....
Progressive locomotortaxia	..	1	....	....	....	....	....
Puerperal septicæmia	..	....	1	....	....	....	....
Typhoid fever	..	1	....	....	1	....	....
Typho-malarial fever	..	1	....	....	....	....	....
Disease of kidneys	..	1	....	....	....	....	....
Abscess prostrate gland	..	....	....	1	....	....	....
Bright's disease	..	....	....	1	....	....	....
Old age	..	....	....	1	1	....	....
Chronic nephritis	...	1	...	....	....	....	....
Drowned	...	....	....	1	....	....	....
Heart disease	..	....	....	1	....	....	....

MONROE COUNTY.

Report of deaths for the three-quarters ending September 30th 1979.

AGE.	Total.	White.		Black.		Mulatto.	
		Male.	Female.	Male.	Female.	Male.	Female.
Under 1 year	6	....	3	1	1	1	....
Under 5 years	14	2	5	3	3	1	....
5 to 10 years	4	2	1	1	....	....	....
10 to 20 years	6	2	....	2		....	....
20 to 50 years	26	11	8	3	1	....	2
Over 50 years	19	8	4	2	2	....	....
Unknown	2	....	....	1	15	....	....

MONROE COUNTY.

Report of Births for the Three Quarters ending September 30th, 1879.

Population in 1870; whites, 8,631; blacks, 14,000.

MONTHS.	Total.	Total.		White.		Black.		Mulatto.		Parents Native.	Parents Foreign	Father Foreign.	Unknown.
		Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.				
January	26	14	12	7	6	6	6	1	....	24	..	1	1
February	19	8	11	8	7	....	4	....	....	19	..	..	..
March	13	10	3	5	3	3	....	2	....	12	..	1	..
April	7	4	3	2	2	2	....	....	1	7	..	..	..
May	13	7	6	5	6	2	....	....	....	12	1	..	..
June	11	7	4	6	1	1	3	....	....	9	..	..	2
July	3	1	2	1	2	....	....	....	....	..	..	..	
August	5	5	....	5	....	....	....	....	....	5	..	..	..
September	1	1	....	1	....	....	....	....	....	..	1	..	..
	98	57	41	40	27	14	13	3	1	91	2	2	3